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SELECTIVE BACTERIOSTASIS IN THE TREATMENT OF INFECTIONS WITH GENTIAN VIOLET

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The selective bacteriostatic property of gentian violet, which has been the subject of various publications[1] since 1912, has been studied during the past three years with particular reference to the possible application of the laboratory findings to the treatment of infections. In recent publications in THE JOURNAL,[2] the results of the treatment of acute infections of the knee joint, by the method of lavage and staining, without operation, were described. These results were sufficiently encouraging to warrant an extension of the studies, and this is now being undertaken with a more abundant material than was at my disposal at the time of the earlier publications.

My purpose in this paper is to report the results of attempts to apply the selective bacteriostatic power of gentian violet to the treatment of infected wounds.[3] The activity of the dye is described as bacteriostasis, the dye is called a bacteriostat, and its property is referred to as bacteriostatic, partly because these words, unlike the monstrous "bactericide" and "bactericidal," are etymologically correct; but more particularly because they describe with nice accuracy the action of the dye. It is certainly true of gentian violet (careful study would doubtless prove it also true of other so-called bactericides) that apparent death of organisms, following exposure to the dye, may turn out, on careful study, to be only delay of growth.

Attention was called to this fact, and to its possible theoretical significance, in a brief note on a series of experiments in which stained *B. anthracis* was injected into the circulation.[4] Furthermore, the fact that the power of this dye (or of any other agent used in the treatment of infection) to prevent growth, may be of equal therapeutic importance with its power to kill organisms is recognized when the dye is described as a bacteriostat; and the fact is of sufficient importance to demand recognition. None the less, in the large amount of literature on the treatment of infections with anilin dyes which has appeared since my first publication in 1912, this important feature of bacteriostasis has been consistently overlooked.

The fact that the power of a therapeutic agent to prevent the growth of organisms may be quite as important as its power to "kill" organisms is one reason the more (a dozen others could be cited) why the custom of estimating the value of a "bactericidal" agent by its phenol coefficient alone is a pernicious one. Such a growth-preventing, or bacteriostatic, property gentian violet possesses, even in very high dilutions. At least it possesses this power, in high dilutions, when the test is made in vitro; but it would be unwise to expect that this sharp selective activity would be exhibited in as clear cut a fashion in wounds as in the test tube. Numerous considerations warned against the folly of such a supposition; and the results in the study on wounds carried out at the Walter Reed Hospital were, indeed, less concise and clear cut than they had been with test tube experiments. None the less they paralleled these; and it was particularly interesting to find that in wounds, as in the test tube, it was the gram-negative organisms which were least affected by the dye. In Figs. 2 and 3, the organism persisting in wounds which had been treated with gentian violet has been stroked at each side of a gentian violet plate, and a stroke of *Staphylococcus aureus* has been made at the center, for contrast. The persisting organism is seen to behave as gram-negative organisms do; and it proved, indeed, to be *B. coli*. The behavior of the gram-positive *B. diphtheriae*, on the other hand, toward gentian violet is shown in Figure 1; and treatment of the wounds, as will be described later, was completely efficacious in ridding them of this organism.

In attempting to apply gentian violet to the treatment of infected wounds, I had in mind the difficulty which had first to be contended with in attempting to use the dye in the treatment of infected joints: the absurdity, that is, of applying this, or any other, bacteriostatic agent to an infected surface with the hope of reaching the organisms concerned, unless this surface had first been mechanically cleansed. When a substance is used which can be as plainly seen as gentian violet, this absurdity is apparent; for the dye is seen staining the secretions and fibrinous products of inflammation, which protect from the action of the dye (as effectively as a layer of grease would do) the

1. Churchman, J. W.: The Selective Bactericidal Action of Gentian Violet, J. Exper. M. **16**: 221 (Aug.) 1912. Churchman, J. W., and Michael, W. H.: The Selective Action of Gentian Violet on Closely Related Bacterial Strains, ibid. **16**: 822 (Dec.) 1912. Churchman, J. W.: The Selective Bactericidal Action of Stains Closely Allied to Gentian Violet, ibid. **17**: 373 (April) 1913; The Selective Bactericidal Action of Methylene Blue, ibid. **18**: 187 (Aug.) 1913; Proc. Soc. Exper. Biol. & Med., 1914, p. 120.

2. Churchman, J. W.: Treatment of Acute Infections of the Joint by Lavage and Direct Medication, J. A. M. A. **70**: 1047 (April 13) 1918; Septic Arthritis of the Knee Accompanying Fracture of the Patella, ibid. **72**: 1280 (May 3) 1919.

3. Ample opportunity for this study was given by the kindness of Surgeon-General Ireland, through whom laboratory facilities and free access to the rich material of the Walter Reed Hospital were provided for the purpose. It is a pleasure to acknowledge with gratitude the kind assistance of the commanding officer, Colonel Glennan, and of the chief of the surgical service, Col. William Keller.

4. Transactions, Tenth Annual Meeting, National Association for the Study and Prevention of Tuberculosis.

underlying granulations in which lie the organisms concerned. In the case of the joints, an apparatus has been devised whereby this preliminary cleansing can be well done;[5] in the case of wounds it was necessary to incorporate mechanical cleansing in the technic of the daily dressings. This was done in a painstaking way. After the usual cleansing of the skin surrounding the wound, the granulations themselves were gently washed with neutral soap, dried by mopping, and then flooded with hydrogen peroxid. This was repeated until the granulations were left naked. Minute pockets were cleaned, much as a dentist cleans the pockets in the gums, and special attention was given to the space just under the skin edge at the junction of skin and granulations where bacteria and secretions are likely to accumulate.

The cleansed granulations were dried by mopping with gauze, and were then painted with a saturated aqueous solution of gentian violet. The first coat was allowed to dry and a second coat applied. This was also allowed to dry, and a dry dressing applied.

Two types of wound were treated in this manner: amputation stumps that had become diphtheria carriers, and amputation stumps with ordinary infection.

These were sufficient reasons for assuming that it might kill this organism in wounds. Something might also be hoped for from its power of penetrating tissue;[6] and the persistence of the dye (it remained apparently unchanged for periods varying from twenty-four to seventy-two hours and even longer) made it seem possible that even if the organisms were not actually stained, the continued presence of dye in the tissues might prevent growth, by a true bacteriostasis.

Both the cases treated were freed of *B. diphtheriae* in a short time. In order to determine positively that the organism was no longer present, the wounds were subjected to the most rigid scrutiny, for no dependence whatever can be placed, in these cases, on a single culture made from a surface smear. It seems probable that the organisms lie below the surface. For these reasons the wounds were regarded as sterile for *B. diphtheriae* only after the following technic had been observed:

(*a*) Four negative cultures were obtained on successive days, the cultures made twenty-four hours after the last previous treatment. Material for cultures was taken from the granulating surface and also *from the blood serum obtained after rubbing the superficial granulations away.*

Fig. 1.—Effect of gentian violet on B. diphtheriae: A divided gentian violet plate, the upper half of which contains gentian violet agar, and the lower half plain agar. The two lateral strokes (*D, D*) are of B. diphtheriae, and between them, for contrast, is a stroke of B coli (*C*). B. coli grows equally well on the two portions of the plate, while B. diphtheriae fails to grow either on the gentian violet agar or anywhere near it.

Fig. 2.—Persistence of a gram-negative organism in a wound treated with gentian violet: The organism obtained from the wound (B. coli) has been stroked across the plate at the sides (*C, C*) and grows equally well on the gentian violet agar and on the plain agar. At the center (*A*) the plate has been stroked with M. aureus, which fails to grow on the gentian violet agar.

Fig. 3.—Persistence of a gram-negative organism in an empyema sinus treated with gentian violet: The organism obtained from the wound has been stroked across the plate at the sides (*C, C*); it is B. coli and grows equally well on the gentian violet agar and the plain agar. Between these two strokes (*A*) the plate has been stroked with M. aureus; this organism fails to grow on the gentian violet agar.

I. AMPUTATION STUMPS THAT HAVE BECOME DIPHTHERIA CARRIERS

One of the most difficult problems to be dealt with at the Walter Reed Hospital was presented by patients with thigh amputations in which wound diphtheria had developed, and who had become diphtheria carriers. Two such patients had been isolated as carriers, one for four months and the other for several weeks; and from the wounds of both, cultures for *B. diphtheriae* had been constantly positive in spite of treatment with diphtheria antitoxin, surgical solution of chlorinated soda (Dakin's solution), argyrol crystals, tincture of iodin, chromic acid, silver nitrate, etc.

B. diphtheriae is gram positive and will not grow in mediums containing minute amounts of gentian violet (Fig. 1). It is killed by staining with the dye; and when observed in the living form in a hanging drop, it takes up the stain with great avidity, in contrast to the gram-negative organisms which—in a hanging drop—stain poorly and slowly.

(*b*) A fifth negative culture was obtained (in the manner just indicated, from the surface and from below the surface) after the wound had been left untouched for four days and the secretions allowed to accumulate on the surface.

(*c*) The cultures were made on Loeffler's medium; after twenty-four hours' incubation they were enriched by pouring glucose broth over the surface; and from this broth, after

5. Fully described in THE JOURNAL, April 13, 1918, p. 1047.

6. Frequent reference has been made, in previous publications, to the fact that gentian violet, applied to the surface of a mucous membrane, penetrates to its depths. Great difficulty has been experienced in getting satisfactory sections, to study the exact depth of this penetration, as the dye is dispersed during the process of cutting even frozen sections, and this fact may lead to great error in interpretang the results. A technic has finally been devised which gives fairly satisfactory sections for microscopic study. The dye is applied to the living mucosa (by injection, for example, into the knee joint or the bladder), and the tissue is at once removed and thrown into Gram's solution, where it is left for two hours. The stained mucosa becomes a brownish black. The material is then put in 40 per cent. dilution of liquor formaldehydi, which, acting like an alcohol, restores the violet color, fixes the tissue, and dissolves out the excess of stain, but either removes not at all, or in the slightest degree, the stain that has been absorbed by the cells. After twenty-four hours' fixation, paraffin sections may be made in the usual manner. I have injected the living human knee joint by the technic described for the treatment of acute infections of the joints, and have made sections of the synovial membrane in the manner described, the leg having been amputated at the midthigh for senile gangrene of the toes. These sections show beautifully the penetration of the dye (Figs. 4 and 5). The question will be more fully discussed in a subsequent publication.

twenty-four hours' further incubation, transplants were again made on Loeffler's medium.

CASE 1.—N., Ward 26. A bad wound diphtheria, with membrane, about four months before. The membrane responded to antitoxin, but the patient had been a constant carrier ever since. Treatments with gentian violet were given daily from July 21 to July 25. Cultures were negative for *B. diphtheriae*, July 21, 23, 24, 25 and 29. There was a slight dermatitis in the skin about the wound, August 10, the wound having been left untouched for one week; cultures from the wound were negative for *B. diphtheriae*.

CASE 2.—Y., Ward 26. A constant carrier since July 2 (probably much longer, as the wound had given an unusual amount of trouble since it was first inflicted, months previously; but *B. diphtheriae* was first discovered July 2). Culture, July 26, was positive for *B. diphtheriae*. Treated with gentian violet, July 26, 27, 28 and 29. Culture, July 30, was positive for *B. diphtheriae*. Daily treatments were given from July 31 to August 9. Cultures, August 5, 7, 8, 9 and 12 were negative for *B. diphtheriae*. Transfer from the isolation ward was delayed by the appearance of an erysipelatoid rash in the upper thigh, 5 inches away from the wound, which appeared suddenly—with constitutional symptoms—and subsided in three days. Culture from the skin showed a coccus, but no *B. diphtheriae*. The patient was transferred to the open ward.

Fig. 4.—Synovial membrane knee joint injected with gentian violet, 1: 1,000, just before a midthigh amputation (low power).

II. STERILIZATION OF STUMPS

No more difficult surgical problem occurs in a hospital like the Walter Reed—where the cases which still present problems are concentrated after the simpler ones have been sifted out—than that presented by unhealed or badly healed amputation stumps. In many of these cases, infection of the skin, soft parts and bone is present; in others, the skin flap left at the original amputation (often a guillotine) is deficient; in some, a persistent dermatitis or eczema has developed. All these conditions interfere with proper treatment, and militate against the success of the plastic operation necessary to provide the patient with a good weight-bearing stump.

The experience with the Dakin-Carrel technic in this type of case had not been particularly satisfactory. If the thigh stump was a short one it had not proved easy to apply the tubes; and when it was necessary to pull the skin flaps down with traction straps—as in most cases it was necessary—this difficuty was greatly increased. Worse than this, the dermatitis of the flaps, if present, was greatly aggravated by the Dakin solution, and in many instances it had to be abandoned for this reason. In other cases, dermatitis not present in the beginning was incited by the Dakin solution; and even in patients who developed no visible skin lesion, complaints of severe burning of the skin were common.

It seemed possible that these difficulties might in part be avoided by attempting to sterilize the wounds with gentian violet. It was certain that this dye could be used without difficulty, by a simple technic, in combination with tension straps, with the use of which it would in no way interfere. It seemed certain, also, that the production of dermatitis need not be feared, as the dye would be applied to the granulations, where it was needed, rather than to the skin, where it was not. It proved, indeed, to be the fact that the progress of the most obstinate cases of dermatitis, already present, was greatly impeded by the use of the gentian violet technic.

Four cases of this sort were treated:

CASE 3.—*Simple granulating wound at the end of a partially closed stump (midthigh).*—Skin irritation had made the use of Dakin's solution impossible. It seemed probable that if the wound could be sterilized and the skin kept healthy, closure could be effected by adhesive plaster traction on the skin edges. Sterilization of this wound was accomplished without difficulty; the granulations became red and healthy, the skin normal; fairly rapid closure occurred, adhesive strap traction being used.

CASE 4. — *Granulating wounds accompanied by marked dermatitis.*—In D., Ward 74, the wound was an unhealed amputation of the thigh and consisted of a strip of dirty, grayish granulations, about 1.5 cm. wide, separating the edges of skin which, for a distance of about 5 cm. from the open wound was the site of a dermatitis of the most obstinate character. The skin was a light, brownish red, covered with dirty, superficial yellow crusts, and touched, here and there, with very superficial ulcerations or abrasions of the top layers of epidermis. The patient suffered much from itching. Nothing that had been tried—and everything known had been tried—had done the slightest good. The indications, it seemed clear were to sterilize the granulations and thus do away with the infection which was causing their unhealthy appearance: and to do this without using any material likely to aggravate the skin condition. This was accomplished by careful mechanical cleansing of the whole field; the granulating surface was then painted with gentian violet and the skin well protected with paste. I received the distinct impression from this case and other cases that the relative sterility of the granulations produced by gentian violet, made the wound secretions less irritating to the skin and so less likely to produce or aggravate dermatitis. At any rate, the progress of this case was striking; the der-

matitis showed marked improvement in a short time; the appearance of the granulations became healthy, and epithelial growth from the skin edges, which had been stationary for weeks, began soon to close the wound in.

CASE 5.—*Granulating wounds accompanied by marked dermatitis.*—C., Ward 74. A case similar to the preceding. The

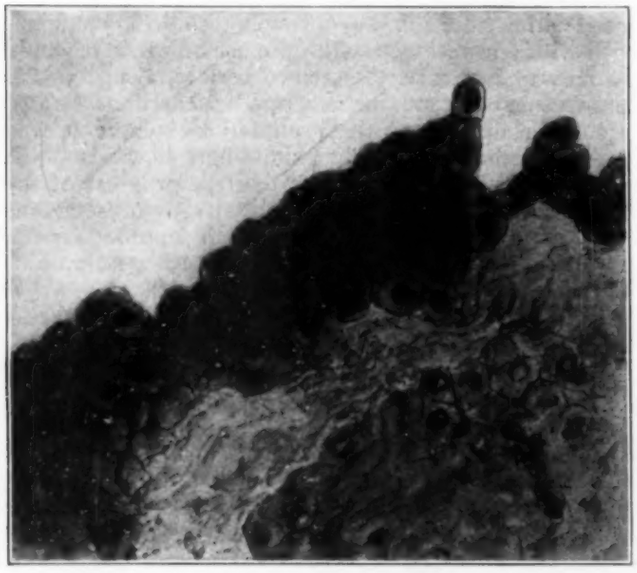

Fig. 5.—Synovial membrane, knee joint, injected with gentian violet, 1:1,000, just before a midthigh amputation (high power).

result of treatment with gentian violet was equally good, though less striking, as the dermatitis was less severe.

CASE 6.—*Granulating wound prepared for plastic closure.*—O., Ward 73, had had a long hospital career, with several operations, always complicated by sepsis. The amputation was at the midthigh. The skin would not tolerate Dakin's solution. A preliminary operation had recently been done, flaps prepared for closure, and the wound left wide open. Under gentian violet treatment, healthy granulations sprang up throughout the wound with great rapidity; these, in three weeks' time, had covered the bone end and reduced the wound to a space about 2½ by 1½ inches. It was impossible completely to sterilize it, a few colories of a gram-negative bacillus (*B. coli*) always appearing in the plates (Fig. 2). August 15, however, a plastic closure was satisfactory except for about 1 inch at the center of the wound where infolding made good approximation impossible. Convalescence was uneventful. Healing occurred by first intention for about seven eighths of the wound. The central eighth (where approximation had been poor) separated about the sixth day for a length of about 1 inch. There was, no doubt, a mild infection in the subcutaneous tissues, but this did not interfere with healing by first intention throughout seven eighths of the wound.

GINGIVITIS DUE TO B. FUSIFORMIS

Reference was made in an earlier article[7] to attempts made to use gentian violet in pyorrhea alveolaris, attempts which were attended with a considerable degree of success. The frequency and severity of ulcerative gingivitis (Vincent's angina) at the Walter Reed Hospital led to the adoption of the dye in the treatment of this disease. The cases were under the care of Major Butler of the dental department, in the excellent dental clinic under his charge. They were large in number and severe in degree; and their course was extremely satisfactory. It was Major Butler's distinct impression that the patients were materially benefited by the dye; but as it is difficult, if not impossible, to control these cases bacteriologically, on account of the presence of the organism concerned in the normal mouth, the conclusions reached have only the value of clinical deductions. The penetration of the gum by the dye and its persistence are not open to dispute; and it certainly deserves more extensive trial in this and kindred types of gingivitis. Moreover, the *injection of the dye into the gums* (suggested in 1918[7]) should be studied, for this method of administration would allow the bacteriostatic action of the dye full play against organisms lying below the surface.

7. Footnote 2, first reference.

VAS PUNCTURE IN ACUTE GONORRHEA

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Current treatment of acute gonorrhea in the male recognizes the two conspicuous end-segments of the seminal duct, urethra and epididymis, but ignores the invisible, intermediate portion—vasa, ampullae and vesicles; yet these, combined, present a mucous surface nearly equal in area to that of the urethra (Figs. 1 and 2). The following departures from the current conception and therapy of acute gonorrhea are based on seven years' treatment of this intermediate segment:

1. The infection reaches the vesicles in more than half the cases during the acute stage, the first weeks. Such extension has been generally unrecognized because the symptoms induced by it have been commonly ascribed to acute prostatitis. The rôle of the vesicles is proved not merely by the detection of their pathologic condition by the trained finger in the rectum, but strikingly by the pronounced mitigation of symptoms which follows immediately on filling them with a proper solution by way of the vasa. For example, a patient in the fourth week of gonorrhea, recently seen with Dr. L. B. Russell of Hoopeston, Ill., had for six days urinated painfully every thirty minutes to two hours night and day. Immediately after his vesicles were filled with 5 per cent. collargol solution, the pain

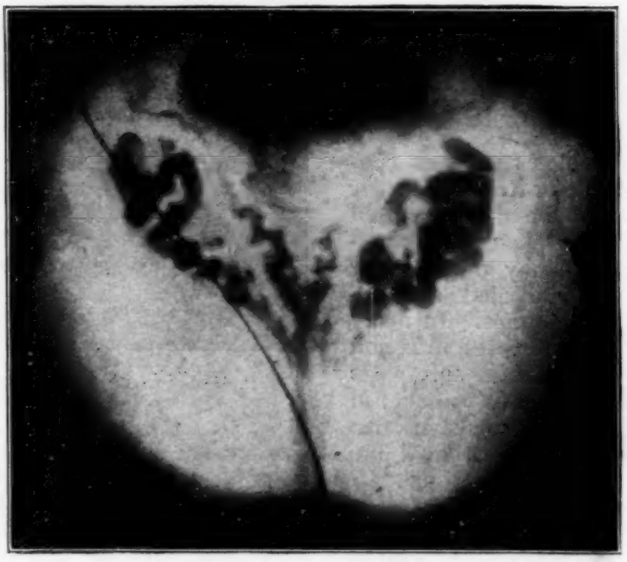

Fig. 1.—Vasa, ampullae and vesicles filled with collargol solution by vasostomy; stiletted catheter in right ureter.

disappeared and the urinary intervals promptly increased to four, five and seven hours.

2. Acute gonorrheal vesiculitis, whether identified or not, has received merely symptomatic treatment combined with vaccines and foreign proteins. When with this aid the patient's immunizing powers fail to overcome the vesicle infection, he joins the great army of sufferers from gleet, chronic prostatitis, sexual

Fig. 2.—Vesicles, etc., filled with collargol solution. Since in chronic vesiculitis the diverticula of the vesicles here pictured are filled with semisolid masses, stripping of such vesicles usually fails to cure the chronic infection; even filling them with collargol occasionally fails.

derangements, and other recognized results of chronic vesiculitis.

3. The acutely infected vesicle, hitherto inaccessible to direct medication, is easily filled with a suitable solution by puncture of the vas. Moreover, a given infection is far more amenable to treatment in the vesicle than in the urethra, for two reasons: first, because the unstratified vesicular mucous membrane is entirely free from lacunae, follicles and glands, such as crowd the deeply stratified epithelium of the urethra; second, because the vesicle, like other sacs enclosed in unstriped muscle (stomach), automatically churns its contents. Since the color of the emitted semen proves the presence of collargol in the vesicles for weeks after they have been filled with it, we can understand that a single filling, followed by weeks of automatic mixing with the infecting agents unprotected by follicles, etc., may end acute infection of the vesicle, though producing far less effect in the urethra.

4. Medication of the vesicles does not, of course, cure the urethral infection, which requires independent treatment. A married man in the third week of gonorrhea showed bilateral vesiculitis; both vesicles were filled with collargol solution, and the urethra was treated by standard methods. At the end of a week the discharge had almost ceased, whereupon the patient discontinued treatment and resumed conjugal relations, using condoms. After nine days he returned with a profuse, purulent discharge, which was found to involve only the urethra (vesicles not infected), and which yielded to appropriate treatment of the urethra.

The prompt arrest of severe infection by this method was illustrated in a patient in the fifth week of gonorrhea, recently referred by Dr. George W. Hall of Chicago:

> When first seen, this patient presented frequent and painful urination, severe perineal pain, creamy discharge with gonococci, tenderness of vesicles, and painful swelling of the right elbow and the right anterior tibial muscle; the temperature was 102.5. Both vesicles were filled with 6 per cent. collargol solution; two days later a thin discharge and subsiding swellings of the elbow and the leg were the only symptoms remaining. The discharge ceased after two weeks' treatment of the urethra and prostate; the arm and the leg were well within ten days after the vesicles were injected. A month after all treatment was discontinued, the emitted semen was found free from gonococci—the only proof of recovery, in my judgment, without which I decline to pronounce a patient cured.

This was the seventh case of acute gonorrheal rheumatism promptly cured by filling the vesicles with collargol. The first patient was operated on in St. Luke's Hospital, in February, 1913.

GONORRHEAL EPIDIDYMITIS

Since gonorrheal epididymitis is always an extension from the infected vesicle, and is prevented by timely medication of the vesicle, it should not occur in patients who obey instructions. Furthermore, the French operation, epididymotomy, leaves undisturbed the infection in the vesicle of which the epididymitis is a result; it mops up the floor but does not turn off the faucet. Twelve cases of recurrent infection in the incised epididymis have come to my notice. In one there had been three recurrences within five months after epididymotomy. In this and six other cases the trouble was ended by medicating the infected vesicle through the vas, which should, of course, be done whenever epididymotomy is performed. It is true that epididymotomy is not always followed by recurrence, and equally true that epididymitis without incision is not always followed by recurrence. But epididymotomy does not prevent recurrence, whereas injection of the vesicle does.

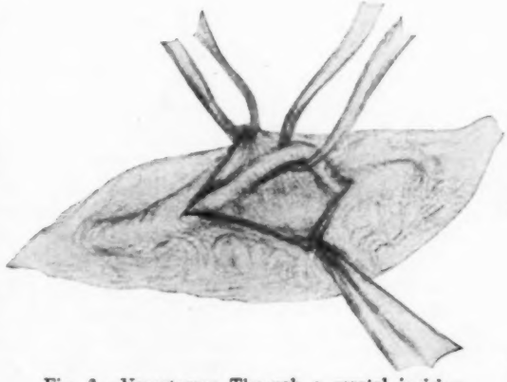

Fig. 3.—Vasostomy: Through a scrotal incision three-fourths inch long the vas is lifted above the skin.

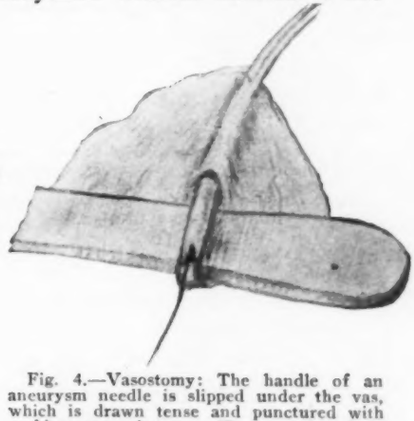

Fig. 4.—Vasostomy: The handle of an aneurysm needle is slipped under the vas, which is drawn tense and punctured with a bistoury point; a silkworm thread is passed into its lumen; the remaining steps are those described under vas puncture.

TECHNIC OF VAS PUNCTURE

The physician inexperienced in the surgery of the spermatic cord should first employ for the medication of the vesicle by way of the vas my original operation, described in textbooks on urology. For by this open operation the vas is lifted out of its sheath, in which it normally slides freely like a tendon, and is supported

above the skin before its minute lumen is opened (Figs. 3 and 4); hence the common pitfalls, notably the disastrous error of injecting the sheath of the vas instead of its lumen, are avoided through visual control.

Vas puncture, on the other hand, does not disturb the relations of the structures concerned, and hence requires familiarity with them. The vas must be immobilized under a tense scrotum. This can be done in many ways, for example, as a woman's embroidery is held tense between two embroidery hoops. The following is perhaps the simplest method:

After cleansing and anesthesia of the scrotum are secured, the vas is pressed by fingers against the lateral scrotal wall, and is fixed by tenaculum lock forceps (Braun's) whose points pierce the skin beneath the vas above the epididymis; a second pair of forceps encircles the vas similarly half an inch above the first. Gentle traction of the two instruments by an assistant renders tense the scrotum overlying the intervening vas (Fig. 5). The scrotum is then rested on any convenient support. An incision one-half inch long or less exposes the vas. This is punctured with a bistoury point just enough to admit a fine silkworm thread, which should advance freely in its lumen. Or the puncture can be made with a hypodermic needle carrying the thread; but the bistoury point causes less injury and gives greater security. A blunt hypodermic or silver canaliculus needle is threaded over the silkworm into the vas (Fig. 6); the thread is withdrawn, and 10 c.c. of a 1:25,000 methylene blue solution are gently and slowly injected (Fig. 7). This should presently cause a desire to urinate; the urine passed should show the dye. If the color fails to appear in the urine, the procedure is faulty, and must be corrected or abandoned. The vas has been found occluded in more than 1 per cent. of my operations. The second vas is injected with fuchsin solution for contrast.

When the appearance of the dye in the urine has proved correct operation and patency of the seminal duct, 20 c.c. of 5 per cent. collargol solution are slowly injected, followed after two minutes' interval, by 1 c.c. of water, to minimize the possible regurgitation of collargol out of the vas. Threaded in a fine hypodermic needle, a silkworm or waxed silk strand is carried into the lumen of the vas and out through the skin one-half inch above (Fig. 8); the needle is withdrawn, leaving the thread; its projecting ends are merely knotted, but are not tied together (important). This thread is a drain out of the vas and a guide for the blunt needle into the vas for subsequent injections, if needed; it should be withdrawn within five days.

Percutaneous puncture without using the knife appeals to the timid patient; but the security afforded by visual control of the puncture through incision far outweighs the disadvantage of the slight cut in the skin.

THE ADVANTAGES OF COLLARGOL AS A REMEDY

Collargol is used for medicating the acutely infected vesicles because of its advantages over all other remedies tried in my treatment of chronic vesiculitis by vasostomy.[1] Among its advantages are its penetrating power (unpleasantly illustrated in the kidneys), which probably explains its presence in the vesicles for weeks after injection; and its liquefying effect on semisolid, purulent masses. That collargol in 5 per cent. solution causes no damage to vas or vesicle, though certain other solutions used in the urethra do, was shown in an admirable experimental work by Lespinasse.[2] It seems also to be the agent generally used by those experienced in vasostomy.[3]

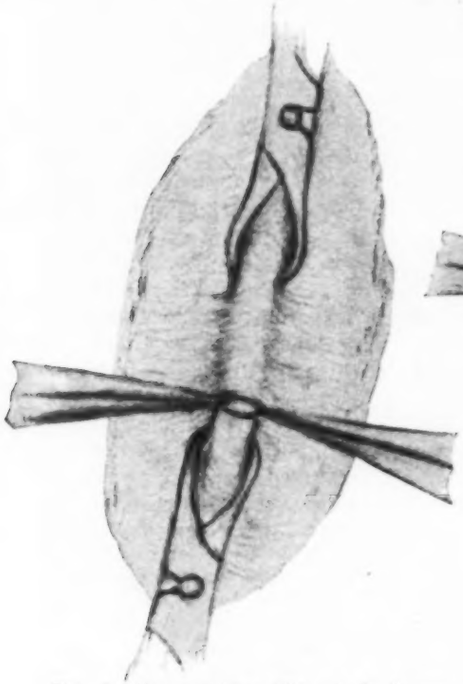

Fig. 5.—Vas puncture: The vas is immobilized under a tense scrotum by traction on tenaculum forceps; half-inch incision through scrotum and sheath to vas, whose coverings are drawn apart by snap forceps.

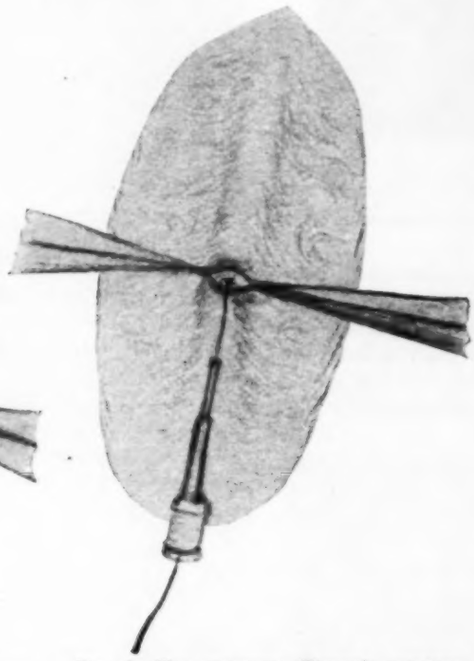

Fig. 6.—Vas puncture: Through puncture of the exposed vas with bistoury point a silkworm thread is passed into its lumen, and a blunt hypodermic needle is threaded over the silkworm toward the vas. (In this and the next illustration the tenaculum forceps, really remaining in position, are omitted to avoid confusion.)

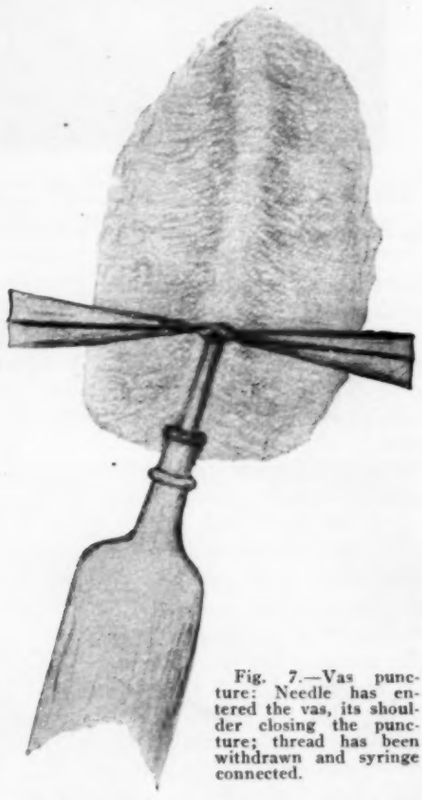

Fig. 7.—Vas puncture: Needle has entered the vas, its shoulder closing the puncture; thread has been withdrawn and syringe connected.

1. Belfield, W. T.: Surg., Gynec. & Obst., November, 1906; Med. Rec., May 4, 1907; Pus Tubes in the Male, J. A. M. A. **53**: 2141 (Dec. 25) 1909; Vasostomy — Radiography of the Seminal Duct, ibid. **61**: 1867 (Nov. 22) 1913.

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3. Herbst, R. H.: Seminal Vesicle Infections as the Cause of Persistent Urethral Discharge, J. A. M. A. **68**: 761 (March 10) 1917; Chicago Surgical Clinic, April, 1919. Bremerman, L. W.: Interstate M. J. **23**: 694, 1916. Caulk, J. R., and Greditzer, H. G.: Ibid, p. 702. Schmidt, L. E.: Bull. Chicago M. Soc. **19**: 18, 1919. Lespinasse, V. D.: Ibid., p. 17, 1919. Thomas, B. A.: Surg., Gynec. & Obst., January, 1917. Mark, E. G.: Proc. Chicago Urol. Soc., Nov. 20, 1919. Martin, A. P.: Siglo méd. **66**: 356 (May 3) 1919; abstr. J. A. M. A. **73**: 305 (July 26) 1919.

ONE UNTOWARD RESULT OCCASIONALLY FOLLOWING VASOSTOMY

On the other hand, collargol is a factor in the only untoward result that ever follows vasostomy properly performed, namely, occlusion of the vas at the site of operation. That this is exceptional is indicated by the observation that four men, each of whom had only one testicle, all furnished normal semen after vasostomy. Such occlusion results partly from the extensive dissection, and partly from the regurgitation of collargol out of the vas into its sheath and surrounding structures, resulting in the formation of fibrous tissue. Both causes are eliminated by the technic of vas puncture already described, which should supersede vasostomy; but should such occlusion occur, it is remediable by a simple procedure, namely, excision of the occluded portion of the vas and union of the cut ends by a catgut or other suture.[4]

In working with the vas and its coverings I never use a sewing needle, but do my sewing with a fine hypodermic needle. This is made to pierce the vas and its surroundings wherever a stitch is desired; a silkworm or other thread is passed through the needle, which is then withdrawn, leaving the thread in the desired position with a minimum of injury to the delicate tissues involved (Fig. 8).

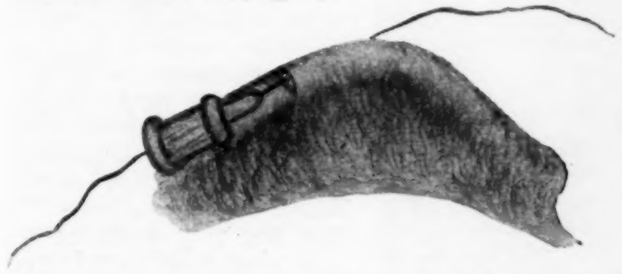

Fig. 8.—Vas puncture: After completion of injection, thread is placed and left as drain from the vas and guide for entrance of blunt needle for subsequent injections.

SUMMARY AND CONCLUSIONS

1. The traditional and still prevalent conception of acute gonorrhea as "specific urethritis" presents only a half truth; for in the majority of cases the disease becomes urethrovesiculitis within the first month.

2. Medication of the acutely infected vesicles and ampullae by way of the vasa with 5 per cent. collargol solution eliminates the infection from these otherwise inaccessible cavities. For this purpose vas puncture is preferable to the original operation, vasostomy.

3. The prompt arrest of the vesicular infection in the acute stage averts chronic vesiculitis with its manifold evils, eliminates epididymitis, and converts the hitherto refractory urethrovesiculitis into a urethritis only, with which we are well equipped to cope.

4. The seriocomic aphorism "Any man can make a date to get the gonorrhea; no man can make a date to get rid of it" reflects the futility of current treatment of the acute infection, futile chiefly because treatment is limited to one half of the infected area, the urethra; while in the other half, comprising vesicles and ampullae, the untreated infection persists undisturbed indefinitely. So long as pus produced in the vesicles appears at the meatus, the urethra is subjected to fresh—and futile—assaults.

In short, we treat acute gonorrhea as urethritis only; we are commonly dealing with urethrovesiculitis.

5. Before injecting the vesicle by way of the vas, the physician should master the technic either on the cadaver or through clinical observation; otherwise the patient should be referred to some one experienced in this work.

32 North State Street.

4. Mayo, W. J., and Mayo, C. H.: Ann. Surg., January, 1895. Lydston, G. F.: A New Method of Anastomosis of the Vas Deferens, J. A. M. A. **47**: 169 (July 21) 1906.

MODERN TREATMENT OF THE WEAK FOOT

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The subject of weak foot and its treatment has already been so thoroughly dealt with that those familiar with the subject may feel that anything now written can be nothing but repetition. To a certain extent this is true, yet there are aspects of the question that still need to be brought home to both the practitioner and the specialist.

Having only lately returned from an absence of nearly two years, I perhaps have somewhat altered my perspective, so that some things stand out more clearly than they otherwise would. I may not claim to cast any new light on an old subject, but I do state fairly that I regard it from a new angle.

To begin with, we have during the past two years given a large number of medical men, old and young, a grounding, or in case that word may seem too sanguine, an interest in orthopedic principles that they never had before. The medical officers in the Army who took the special orthopedic training have had emphasized, for probably the first time in their lives, posture, backs and feet in their direct relationship to efficiency. Efficiency is a much overworked word, one that is exceedingly objectionable to me. Let us say that it has been impressed on these observers that the man who walked with his back hollow and his toes turned out was unfit for the job that he had in hand. There could not have been a more favorable opportunity for the demonstration of the soundness of these principles, and for the change in public opinion that removed their supporters from the ranks of the faddists to those of the practical men. For almost the first time they were able to work with large bodies of men who were interested in what they had to say, and who looked to them to remove the stigma of being "unfit for active service." Incidentally, the surgeon experimenting for the first time in the application of these principles found the interest of his patients a spur to his mastery of the principles which he was trying to apply.

It is the combination of these two elements—interest on the part of both patient and physician—that is responsible for the present optimism displayed by certain members of the profession toward orthopedic practice in general. Many whose experience has been solely in cantonments on this side or in base hospitals or on splint teams in France are now deciding to take up orthopedics as a specialty. The public is interested and anticipatory. The word "orthopedics," though its meaning is by no means understood, has obtained wide circulation. It is with the idea of averting a certain disappointment that I am taking up the subject of the present day treatment of weak foot.

It may be said that there are at present two schools in the treatment of the weak and painful foot. The

first, and undoubtedly the largest, believes, or at any rate, practices, on the assumption that a sore foot is one of those ills to which man is inevitably heir, and that all that is needed in the way of treatment is relief of the patient's symptoms. This is accomplished in a variety of ways—by raising the inner border of the shoe, by applying a leather footplate, by putting bent pieces of metal in the shank of the shoe, or by applying various forms of metal sole plates. Little if any attention is given to the patient's attitude, or manner of standing or walking. If one questions the more learned followers of this school, they will answer that no patient is interested in his feet beyond the relief of the pain from which he may be suffering at the moment, and that any attempt to reform lifelong habits of gait, or style of shoe, is a waste of breath.

WEAK FOOT IN THE ARMY

The war has dealt a heavy blow at what we may call this "laissez-aller" school by demonstrating that the great majority of foot troubles could be cured without any apparatus whatever. There are two reasons for this. The first is that it was impossible to apply the apparatus. When I first joined the British Expeditionary Forces in May, 1917, as orthopedic surgeon to Base Hospital No. 2 (General Hospital No. 1, B. E. F.), I made a few attempts at manufacturing braces for the Tommies sent down the line because of disabilities of the foot. These, however, were fruitless, partly on account of the stupidity of the local French blacksmith, but mainly on account of the attitude of the British liaison officer, who said that even the most finished apparatus would be neglected or broken by the Tommy—neglected because he neglected everything outside his regular routine, or broken because he wanted an excuse for a rest. As they were in the habit of losing, breaking or pawning their false teeth for similar reasons, his point seemed well taken, and hundreds of otherwise fit men were shipped through to Blighty, there to be classified as P. B. (permanent base troops).

Fig. 1.—The body weight, when the toes are turned out, falling on the inner border of the foot, as shown by the crease of the trousers.

At the time I was transferred to the American Expeditionary Forces, in February, 1918, this attitude—that apparatus was unpractical—seemed officially adopted by the orthopedic department of the American Expeditionary Forces. It, however, had gone the British one very much better in establishing a camp, or battalion, for soldiers rejected for active duty because of weak feet, weak backs, etc. There the feet were treated by raising the inner borders of the patient's heels and soles, and occasionally by applying a leather strap about the foot and ankle. Metatarsalgia was treated by a leather bar nailed across the sole behind the heads of the metatarsals. By carefully graded exercises alternated with periods of rest, and by constant supervision and rigid discipline, a very large proportion of these soldiers were returned to combat duty, one of Colonel Goldthwaite's greatest triumphs.

The first demonstration that weak foot could be cured without apparatus thus being that apparatus under the existing circumstances was unpractical—a decided forcing of the issue—we now come to the second. This was, as has already been suggested, military discipline plus morale and intelligence. The majority of the troops in question were willing and anxious to fight. Unless their feet were cured they could not. They therefore took the liveliest interest in their recovery. They were, in addition, under the direction of trained officers of more than ordinary experience, such as Major Z. B. Adams and Lieut.-Col. G. W. Hawley, and under them they were supervised by highly trained noncommissioned officers. They were properly shod and properly clothed, and their general condition was excellent. We have demonstrated the proposition that weak foot of this type can be cured without apparatus by taking highly trained athletes, eager for their task, under expert supervision and rigid military discipline.

WEAK FOOT IN CIVIL PRACTICE

Contrast the conditions which obtain in civil life. In hospital practice at least half of the patients are women, middle aged, hard working, fat housekeepers, on their feet all day long, 25 per cent. suffering also from varying degrees of varicose veins. The men are very much of the same class, middle aged street car conductors, policemen, bakers, cooks, and the like. There are comparatively few young men and girls and almost no children. As an illustration, the statistics of the Hospital for the Ruptured and Crippled during September, 1919, may be considered: Double weak foot: Males, 117; females, 146; under 15 years, 45; over 15 years, 218.

In private practice, men come because they are worried about a continual tired feeling, or a "strained foot" that does not get well, or because they have been told by the family physician that they have gout or rheumatism. Women come for the same reasons, and in addition there are a few who seek cosmetic improvement. Of late years, there have been a large, and fortunately increasing, number of children brought because of the ugly appearance of their feet, or awkward and peculiar gait.

To attempt the cure of these classes of patients is a widely different proposition from the military problem just described. The main obstacle, and the one first encountered, is indifference—indifference on the part of the patient and on the part of the physician. Most of the patients come expecting to be given some shoe that will afford immediate relief, and most of the physicians give treatment which may well be summed up in a reply given me by the chief of a large orthopedic clinic in a center of orthopedic teaching, when asked

how he treated these patients in hospital practice: "Anything to get rid of them."

We may assume, however, that men taking an interest in the subject for the first time, as our lately developed orthopedic practitioners are, will not be satisfied so lightly to dismiss the subject. We may assume also that an increasing number of patients will not be satisfied so lightly to be dismissed. I am strengthened in this opinion by the fact that I encounter in my hospital practice practically no patients who have not previously sought relief in some form of "orthopedic shoe," or by means of the various sole plates sold in drug stores. They will all state that these measures gave temporary relief, but that in a comparatively short time their symptoms returned. It is only rarely that they have been given any instruction in exercises, gait, posture, and the proper methods of using their feet. These facts may explain my skepticism in regard to the permanent effect of treatment by varied and nondescript forms of apparatus—apparatus applied for the relief of symptoms without aiming definitely at the original cause of the defect.

Except in rare cases of congenital flatfoot, and deformity as the result of accident, it may be safely stated that the underlying cause of weak foot is the attitude of eversion of the foot. To put it in the simplest possible way, the principal cause of weak foot is the persistent attitude of eversion, to which the commonest predisposition is the practice of standing and walking with the toes turned out. The effect of this attitude is to cause the body weight, transmitted downward through the lower extremities, to fall to the inner side of the foot instead of through its center. This attitude being established, it is only a question of time for the astragalus to begin rolling downward and forward off the os calcis, thereby pressing on the ligaments, causing pain, and ultimately deformity. The mechanism of this process is simplicity itself, and may be demonstrated by dropping a plumb line from the patella, noting where the weight falls when the feet are in the different attitudes. A well creased pair of trousers may be adapted to the same purpose, as in the accompanying illustrations.

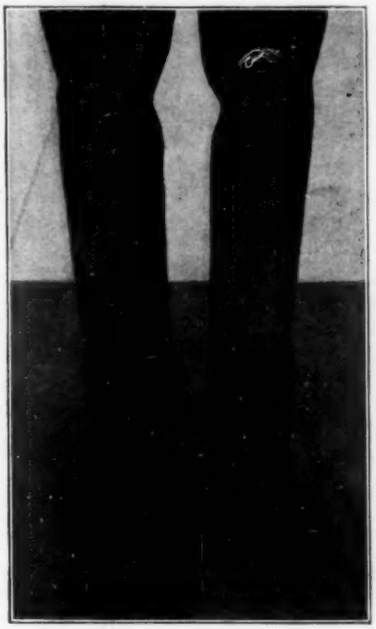

Fig. 2.—The body weight, when the feet are parallel, falling through the center of the foot.

Once this principle has been established, it remains only to correct the bad habit in the patient. Granted that this may be done by military discipline plus the desire of the patient to be cured, in civil practice we encounter two difficulties. The private patient is not sufficiently interested in his feet to devote to them the necessary amount of thought; and the hospital patient, who has to be cured during the course of the very occupation that may have caused his disability, has not the strength in his tired and overstretched muscles to maintain the attitude continuously. We therefore find it necessary in most cases to apply some form of support.

METHOD OF TREATMENT

The only apparatus hitherto devised which at the same time supports and attempts to correct the predisposing attitude is that of Dr. Whitman. It not only "supports the arch," but also provides the lateral pressure which, as it were, nips the deformity in the bud. If a patient wearing the brace attempts to turn his toes out, he becomes actively uncomfortable; and in pulling away from the pressure of the brace, he assumes the overcorrected attitude which is intended to become habitual.

It is a fact unfortunately not universally recognized that the muscles of the weak foot have become stretched, relaxed and weakened in proportion to the length of the period of their accommodation to the faulty attitude of the foot. By a proper combination of rest and exercise, they may be enabled to "take up their slack"; but it is exactly this combination that the patient is not willing to give them. In short, it is the lack of respect with which the individual regards his feet that makes proper treatment so difficult. He will take time from business to devote to the treatment of an abscess at the root of a tooth from which he has never had any symptoms; he will give up days to the correction of an error of accommodation; but the idea of staying off his feet out of consideration for an acute foot strain appeals to him as absurd, unless an element of the mysterious and bizarre be added. This is the basis on which lies the success of the tendon-lengthening and other operations for the relief of the weak foot. If the patient can be so impressed with the gravity of his complaint that he is willing to submit to an operation, the prolonged rest in plaster of Paris enables the relaxed ligaments and muscles to contract in the overcorrected position, and when he emerges from his confinement, the operative scar serves as a constant reminder of the surgeon's advice as to gait and posture. It is only in exceptional cases, however, that actual shortening of the Achilles tendon makes such a procedure necessary.

It is as a mean, therefore, between depending solely on the patient's attention to the directions given him, and placing his foot in plaster—the fool-proof preliminary method of treatment—that we have recourse to the proper brace. This forces the patient when walking to employ his muscles with the foot held in the correct attitude, and when he is at rest serves as a splint to prevent his foot from sagging into the attitude of deformity, and again overstraining his weakened muscular and ligamentous supports.

It is not my purpose to maintain that brace treatment may be uniformly successful. While it is acknowledged that the fitting of a tailor-made suit is a procedure calling for a high degree of skill, it appears to be assumed that any one, from surgeon to chiropodist, should be able to fit a rigid metal support to a weight-bearing surface and make it fit comfortably the first time. This impression should be dissipated. The process implies a familiarity with the handling of plaster of Paris, the molding of casts, the vagaries of the brace maker and, above all, of the patient.

The cast of the entire foot should be taken with the foot on its side, in the corrected and nonweight-bearing

attitude—in other words, the brace is to be fitted to the foot in its best possible form. Braces fitted to sole impressions of the foot are practically useless. The cast of the foot should then be trimmed according to what the surgeon thinks the particular patient will stand, always with the idea of obtaining the closest fit coincident with comfort. The outer aspect of the heel, where the lateral and plantar surfaces join, should be slightly built out with plaster to allow for the expansion of the heel when weight is borne; otherwise the outer flange of the brace will cause too much pressure at this point. The outline of the brace should be carefully marked by the surgeon himself. The heel and sole of the shoe should be raised a quarter of an inch on their inner borders. The patient should then be instructed that he is to accustom himself to the brace gradually. The first day that he wears it, he is to take it out of his shoe as soon as it hurts him. He is to do the same on the three or four following days. If at the end of that time he notices that the brace is still pressing into his foot sufficiently to cause a painful spot, he is to report to the surgeon, wearing the brace, so that adjustment of it may be made according to the marks on his foot. It should eventually be possible so to adjust the brace that it makes neither a mark on the foot nor a perceptible line on the shoe. Any external evidence on the shoe that the patient is wearing a brace is an indication of improper fitting.

Finally, one should always instruct the patient that his cure rests entirely with himself. Of course, there will always be found cases of such severity and of such long standing that cure cannot be hoped for. To the average patient, however, it should be made perfectly clear that his true recovery depends on himself, not on any form of support. He should be encouraged to look forward to the time when he may give up braces, lifted shoes and exercises, and depend for the future on his acquired habits of gait and posture. The first stage in the discarding process is that of the lifted shoe. He should change every other day, or, perhaps, at the beginning for only half a day, from the lifted to the flat shoe. When he has become accustomed to the flat shoe permanently, he should start a similar process with a brace; but during this period he should go so slowly and methodically that he can immediately lay his finger on any excess that causes a return of symptoms. In such an event he sets his program back to where he was a week before his symptoms occurred, and starts over again.

SUMMARY

The points which I wish to make in the rational treatment of the weak foot are these:

1. The average weak foot may be cured.
2. It may be cured in three ways:
   - (*a*) By proper shoes, plus a rigid supervision of the patient's daily exercise, gait and posture.
   - (*b*) By prolonged rest in plaster of Paris with the foot in the overcorrected attitude, plus or minus operative procedure, followed by exercises, etc.
   - (*c*) By the application of a proper brace, combined with daily exercises, etc.

I wish to establish a line of demarcation between the treatment of the weak foot and the treatment by palliative measures of the symptoms arising therefrom.

I do not expect that the average practitioner or specialist will depart from his present practice, or that any large proportion of patients will make the esthetic sacrifice of abandoning the footwear that to them seems beautiful, or the lifelong habits of walking and standing that have descended to them from generations of dancing masters. I do believe, however, that the late wide experience of the war has awakened a large number of physicians, and a much larger number of laymen, to an interest in the foot and its disabilities. I believe that from now on there will be a steady improvement in the shape of footwear, particularly in men's shoes, and that the rising generation, in view of the possibility of universal military training, will be anxious to avoid the stigma of being physically unfit, and will therefore seek and require constantly better advice on the subject of foot management. I do not quarrel with long established measures for relieving symptoms which have in the past and will in the future satisfy large numbers of patients and practitioners.

I hope that eventually when a patient appeals to a surgeon for the relief of symptoms arising from a weak foot, the first point to be established will be whether that patient is to be treated for the relief of symptoms or for the cure of their underlying cause. I believe that no matter how enthusiastic a patient and physician may be at the outset, without military discipline it will always be difficult to effect a cure without applying a support. I hope that if a support is applied it will be a rational one, painstakingly fitted by a competent person, and applied with a perfectly clear mutual understanding of its purpose and of its temporary character.

283 Lexington Avenue.

MALIGNANT ENDOCARDITIS WITH PERFORATION OF BOTH MITRAL AND AORTIC VALVES

REPORT OF A CASE *

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AND
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Perforation of one of the valves of the heart occurring in malignant endocarditis is occasionally seen at necropsy and is not considered a very unusual complication. However, the finding at necropsy of perforation of two valves of the heart is of rare occurrence, and we believe it is of sufficient interest to warrant the subjoined report of a case.

REPORT OF CASE

History.—Private J. A. A., white, aged 27, admitted to one of the medical wards of U. S. Army Debarkation Hospital No. 5, March 3, 1919, directly from the overseas transport, had no untoward symptoms on board ship, and was admitted to the hospital in good condition considering the gravity of his cardiac condition.

The present trouble began, Feb. 1, 1919, following exposure, with indefinite pains in the right lumbar region which were aggravated by standing, and with inability to use the right leg. For a few weeks previously the patient had had a slight cough and occasional night sweats, and had lost some weight.

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* From the medical wards, U. S. Army Debarkation Hospital No. 5, Grand Central Palace, New York City.

Physical Examination.—On admission, the head and neck were negative. The pupils were equal, and reacted to light and accommodation. The throat was negative, and there was no enlargement of the thyroid gland, but there was visible pulsation in the vessels of the neck. Examination of the lungs revealed the presence of a few moist râles over both bases, posteriorly.

The left border of the heart extended two finger breadths to the left of the midaxillary line. The apex beat was located in the fifth intercostal space to the left of the nipple. A systolic murmur was heard at the apex, and transmitted to the left axilla. A diastolic murmur was heard over the aortic region, and transmitted downward over the sternum. The heart was fully compensated.

The patient had a peculiar "waxy complexion," which persisted up to the time of his death. He gave one the impression that he was suffering from a very grave form of anemia.

Examination of the blood, March 12, revealed 3,270,000 red cells, 11,000 leukocytes, and 90 per cent. hemoglobin. The cellular structure was normal. Differential leukocyte count revealed 89 per cent. polymorphonuclears, 4 per cent. small mononuclears, and 11 per cent. large mononuclears. Blood cultures on the same day showed the presence of a pure culture of *Streptococcus viridans.*

Urinalysis, March 4, revealed clear, amber urine of acid reaction; the specific gravity was 1.018; there was a trace of albumin; no sugar was detected; there were a few granular casts. Urinalyses, March 6, 10 and 11, revealed no change.

Clinical Course.—From March 4 to 9, the patient's condition remained about as described. March 10, at 10 a. m., the patient very suddenly complained of severe dyspnea. The pulse rate was 140, the air hunger was very marked, and he was covered with a profuse perspiration. The extremities were cold, and the patient complained of chillness. After the application of heat he appeared to be more comfortable and less dyspneic.

Fig. 1.—Perforation of mitral valve (*A*) and aortic valve (*B*) in malignant endocarditis.

March 11, he had another very severe attack of dyspnea, and showed signs of collapse. The forenoon of the following day, he had another severe attack of dyspnea and was extremely restless. This dyspnea was followed by a sudden onset of cyanosis, and the patient died at noon, March 12.

Necropsy Findings.—Necropsy was performed one hour after death. The skin was very pale and somewhat emaciated. There were no scars or markings on the body.

The head was not opened. The abdomen and chest were opened by the usual incision. Very little subcutaneous fat was present, and the muscles were fairly well developed.

The pericardium was adherent to the parietal pleura. The tissue was seared, and a sterile pipet was thrust into the pericardial sac and about 10 c.c. of fluid withdrawn for culture. This culture showed the presence of a pure culture of *Streptococcus viridans.* The pericardial sac was then opened and about 500 c.c. of clear, straw-colored fluid were withdrawn.

The heart was seared, a sterile pipet thrust into the left ventricle, and about 5 c.c. of blood were withdrawn for culture. This showed a pure culture of *Streptococcus viridans.* The heart was enlarged about two and a half times the normal size. The muscular structure was poor, and the muscles were somewhat flabby. The left ventricle was hypertrophied. In the heart, postmortem clots were found in abundance. The pulmonary and tricuspid valves were apparently normal, while the aortic valves were greatly thickened with dense vegetations, and their margins were very irregularly perforated. One of the cusps of the aortic valve showed a perforation which admitted the tip of the little finger (Fig. 1). There were small, warty vegetations on the wall of the aorta. The mitral valve showed the presence of vegetations similar to those seen on the aortic valve. One of the cusps of the mitral valve was so sacculated that the sac would admit the thumb. There was a perforation at the bottom of the sac (Fig. 2), and warty vegetations on the chordae tendineae and papillary muscles, and above the walls on the wall of the left auricle.

There was one dense adhesion to the surface of the chest wall at the upper part of the lower lobe of the lung on the left in the midaxillary line. There was marked anthracosis. The bronchial glands were somewhat enlarged.

The liver was mottled and slightly enlarged, and there were numerous soft adhesions to the surrounding structures. The spleen was about two and one-half times the normal size. There were many adhesions and a small cyst with a thick capsule and filled with necrotic material. Both kidneys were adherent to the surrounding structures by firm adhesions. They were slightly enlarged and congested, with small petechial areas on the surface.

Microscopic Examination.—The lungs, heart, spleen, liver and kidneys were removed for microscopic examination.

Sections of the lungs showed that many of the alveoli were filled with desquamated epithelial cells, some of which contained a brown, finely granular pigment. A few of the bronchioles were also filled with epithelial cells. The blood vessels were not dilated, and there was no thickening of the alveolar or bronchial walls.

Near the pericardial surface of the myocardium was an area containing many small blood vessels and small round cells. The muscle fibers had been replaced by scar tissue, which was believed to be a small healing infarct. The myocardium otherwise seemed normal. The pericardium showed no change. Section of one of the aortic leaflets revealed the surface covered with great masses of fibrin, in the meshes of which polymorphonuclear leukocytes were entangled, and in and on the surfaces of which there were also enormous masses of bacteria. Some of the fibrin had undergone hyalinization. With the Goodpasture-Weigert stain the bacteria were found to be gram-positive cocci in long chains.

In one of the sections of the spleen, many small areas of coagulative necrosis were seen. The pulp contained many leukocytes. The connective tissue was not increased. In another section there was a large infarcted area containing great colonies of bacteria. About this area there were many pigments containing phagocytes. There was much fibrous tissue about the margin of the infarct.

The cells about the portal areas of the liver were very much swollen and granular. About the hepatic vein the parenchyma cells were necrotic, and there were rather dense accumulations of leukocytes. In some of the areas the necrosis was not so marked, and in these the nuclei of the cells had disappeared; and there were many fat droplets within the cells. There was no increase in the amount of connective tissue, and the bile ducts seemed normal.

In one of the kidney sections, the epithelial cells of the tubules were very much swollen and granular, giving the lumen of the tubules a ragged or stellate outline. There was

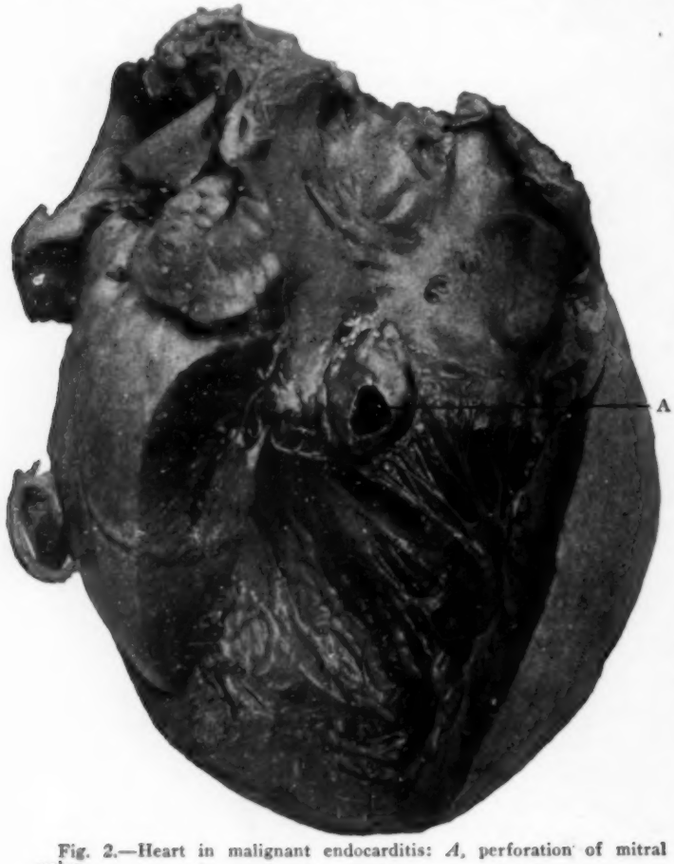

Fig. 2.—Heart in malignant endocarditis: *A*, perforation of mitral valve.

no increase in the interstitial tissue. A small hyaline thrombus was found in one of the glomeruli. In another section, there was seen in addition to the changes mentioned above an area of coagulative necrosis. There was a moderate accumulation of leukocytes at the margin of the infarct.

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Vomiting and Pyloric Stenosis.—Pyloric stenosis requiring surgical measures for its cure may exist many months or years without any vomiting at all, the patient's symptoms being merely those of more or less severe indigestion and discomfort. Experience teaches that the stomach begins to reject its contents only when the stenosis has been existing for a fairly long time; that in the earlier stages—when the condition is all the better for operation—the stomach does its level best to carry out its duty of driving the food along through the narrowing pylorus, only later giving up the effort and ejecting the food by periodic vomiting as the easier alternative.—Herbert French, M.D., F.R.C.P, *Medical Press and Circular.*

OPERATIVE TECHNIC IN SPINA BIFIDA *

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In few operative procedures is the mortality, both immediate and secondary, as high as that of spina bifida. The immediate death rate from shock, meningitis, etc., is approximately 33⅓ per cent., while the secondary mortality from hydrocephalus, convulsions, etc., is equally great, resulting in an ultimate loss of from 60 to 70 per cent.[1] of the patients. According to Hildebrand[2] only about 39 per cent. make complete recoveries. Judicious selection of cases for operation, followed by rational, conservative technic would surely do much not only to reduce this discouraging mortality, but also to establish the surgery of spina bifida on a sound basis.

This very obvious point has been quite clearly set forth in the majority of writings on the subject. Thus, Beckman and Adson[3] emphatically advise against operations associated with marked hydrocephalus or paralysis of the lower extremities unless, in the first instance, the hydrocephalus is either allowed to become stationary or is relieved, for example, by puncture of the corpus callosum; and in the second instance, unless it is understood by all concerned that operation will have no remedial effect on the paralysis. Thorburn[4] and Tubby[5] of England agree with these authors and enumerate frequent instances in which operations for spina bifida associated with hydrocephalus markedly aggravated the hydrocephalic condition.

Excluding, therefore, all cases associated with an increasing hydrocephalus as at least temporarily inoperable, we are reduced to: (1) operations on simple meningoceles in which the prognosis, if precautions hereinafter mentioned are observed, should be good, perhaps below 5 per cent., and (2) operations on meningomyeloceles and syringomyeloceles, which are performed with little hope of remedying the paralysis and with the purpose only of removing a deforming tumor and preventing subsequent ulceration and rupture.

In the latter cases, despite the disappointing results in regard to paralysis, operations may be said to have a quasi justification, since few children thus afflicted ever reach maturity if not operated on; moreover, an unsightly tumor is removed. In the meningoceles, there is no contraindication to operation so far as the local condition is concerned, and no apparent reason why low mortality and good operative results cannot be secured in any of the three varieties of this group, as described in the excellent classification of Binnie[6]:

A. A defect of the posterior osseous wall of the spinal canal is present. The skin, spinal membranes and cord are intact. There is a hernia of the dura through the osseous defect. Fluid in greater or less quantity is present in the dilated subdural space.

B. The conditions are the same as in A, except that the arachnoid is involved in the hernia, and the collection of fluid is in the subarachnoid space.

* Read before the Western Surgical Association, Kansas City, Dec. 5, 1919.

1. Albee, F. H.: Orthopedic and Reconstruction Surgery, 1919.
2. Hildebrand: Verhandl. d. deutsch. Gesellsch. f. Chir., 1893, p. 69.
3. Beckman, E. H., and Adson, A. W.: Collected Papers, Mayo Clinic, Philadelphia, W. B. Saunders Company, 1917.
4. Thorburn, W.: Oxford Surgery, 3.
5. Tubby, A. H.: Deformities.
6. Binnie, J. F.: Operative Surgery, Philadelphia, P. Blakiston's Son & Co., p. 716.

C. A defect exists in the dura as well as in the bone. Through these defects there protrudes a hernia sac consisting of the arachnoid. The skin, pia and cord are intact.

OPERATIVE TECHNIC

By transillumination, as used in hydrocele, one can determine with a fair degree of accuracy whether the sac contains nerves or cord, or both. At times, however, this may be misleading because of thickening and irregularities of the sac wall. In such cases application of a weak faradic current to various points on the sac may be of some diagnostic aid. Most frequently, however, the diagnosis of meningomyelocele depends directly on clinical evidence, such as clubfoot, partial or complete paraplegia, or defective sphincter control, some of which are nearly always present in a greater or less degree if a nerve is involved in the sac.

It is usually advised to place the child in the ventral Trendelenburg position or in the hanging position of Babcock in order to prevent or reduce to a minimum the escape of cerebrospinal fluid following incision of the sac. This step, of course, is of considerable importance, but I prefer in its place the expedient of applying a light rubber-covered clamp to the neck of the sack, as is hereinafter described and advocated With this step in view. the child is placed in the ventral recumbent position with the operator and his assistant seated on opposite sides of the operating table. In this, as in other delicate and minute surgical operations, the sitting posture of the operator has advantages which are obvious and important.

The first step of the operation consists in the taking of every precaution against the contamination of the wound. The importance of this cannot be overestimated, because the one imminent postoperative danger in spina bifida is meningitis from wound infection. Contamination is made especially dangerous because often the site of the wound not only lies near the anal region, but because it also lies in the direct groove along which the infant's urine and feces are most likely to extend. Tubby,[5] in discussing contraindications to operations in spina bifida, emphasizes that "lumbosacral tumors must be approached with caution because of the difficulty of avoiding fecal and urinary contamination." With this in mind, I place a piece of rubber dam over the tumor, and suture its lower border with fine chromic catgut to the skin of the child's back. The suture material, if quite fine, will allow of from eight to ten incursions and excursions of the needle to each inch of skin traversed. By reinforcing with collodion, this suture line may be made water tight. The rubber dam is then turned downward, and the second procedure is begun.

This step consists in dividing the circular collar of true skin which usually is present about the base of the tumor. The tumor may, of course, in the first variety of meningocele, have a covering of true skin; but in

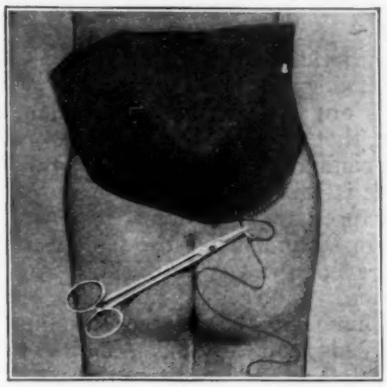

Fig. 1.—Suturing lower curved border of rubber dam protective to the skin of child's back: first step in making water-tight barrier against contamination of wound from excreta.

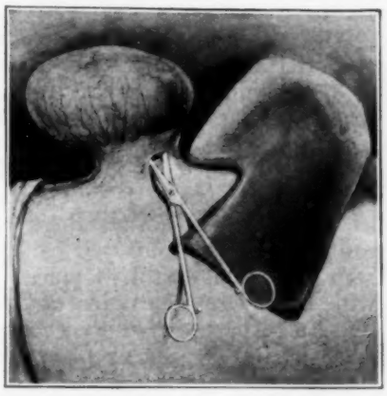

Fig. 2.—Circular incision begun in the collar of true skin which is present in most meningoceles. This circular incision to free the sac neck is conveniently and safely done by scissors-spreading dissection.

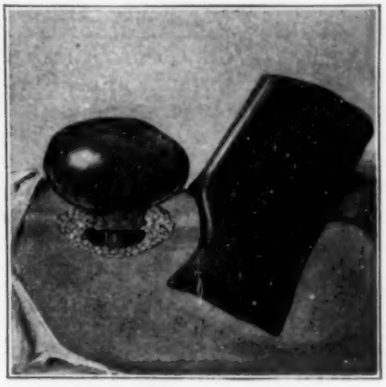

Fig. 3.—Circular skin and fat incision complete, and neck of sac free.

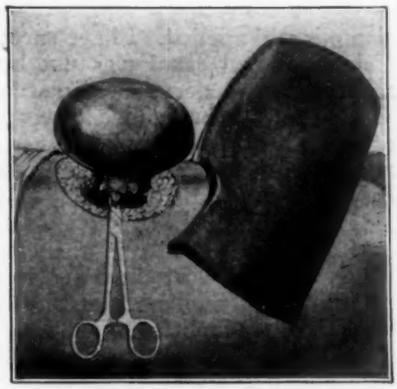

Fig. 4.—Rubber-covered light intestine clamp applied to neck of sac to prevent escape of cerebrospinal fluid and entrance of infection.

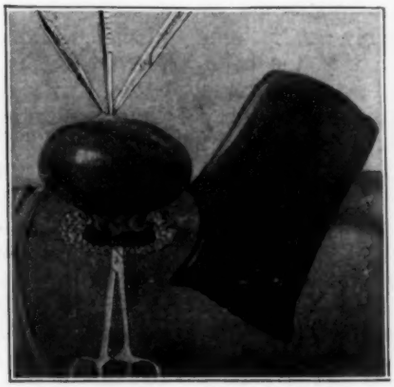

Fig. 5.—Opening sac at thin and unusually transparent vertex of tumor.

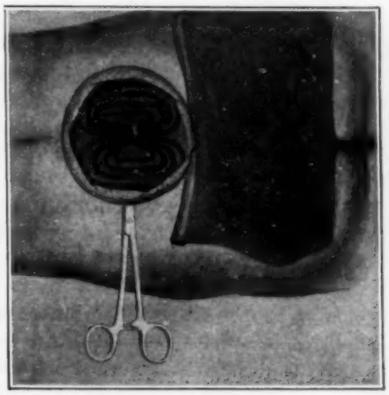

Fig. 6.—If cord elements, as shown diagrammatically here, are present in sac, they can be freed while clamp offers protection against infection and escape of fluid, although the chance of benefit to paralysis resulting from operation in myelocele is practically nil.

those cases in which the tumor has no external covering except a very thin skin epithelium, there is nearly always a collar-like base of thick skin through which the true sac extrudes. By the employment of the scissors-spreading method of dissection, the circular incision through the skin at the base of the tumor may be made with little danger of the escape of fluid. The neck of the sac is then exposed as is the neck of the sac of the umbilical hernia in the Mayo operation, and is freed of all fat and connective tissue. The sac is then grasped between the rubber-covered jaws of a pair of light, delicate intestinal forceps.

The use of these clamps may be considered as of the highest importance in the surgery of spina bifida. It has been the practice, as mentioned above, to place the child either in the ventral Trendelenburg posture or in the hanging position of Babcock in an effort to minimize cerebrospinal fluid leakage. The clamps, however, preclude such leakage with much greater certainty than does position, and in addition they are a valuable agent in excluding infection from the spinal cord. It may be contended that clamps will traumatize whatever nerves may be present in the sac. In respect of this point it should be noted, first, that whatever nerves are present in the sac will probably never functionate even if replaced, and secondly, that the brief application of such delicate clamps will no more cause permanent nerve injury than will gastro-enterostomy clamps injure the stomach, or obstetric forceps injure the fetal head.

The advantages presented by any method which assures against loss of cerebrospinal fluid should not be overlooked. Thorburn[4] calls attention to this fact, saying, "It is in connection with this portion of the operation that its principal dangers—shock from profuse flow of cerebrospinal fluid or interference with nervous structures and meningitis—arise, and great caution should therefore be used to avoid a sudden escape of contents." Further he advises that "the upper end of the sac should be compressed with gauze to prevent a gush of fluid from the spinal cord." In addition to the advantages of the clamp method as just presented, the application of a rubber-covered light clamp greatly facilitates the replacing of the nerve elements in meningomyelocele.

With the neck clamped, the sac is opened by snipping it through the thinnest part, which is usually at the vertex of the tumor. Binnie[6] advises against opening the sac at this point since in meningomyelocele one is most likely to encounter cord and nerve structures in the median line. This is clearly a proper precaution unless one has been able to establish the diagnosis of meningocele beyond any doubt. If, however, the sac is opened at any point by a very small incision which is enlarged by scissors-spreading dissection, cord and nerves may be saved from trauma. If on opening the sac it is found to be free from nerve elements, a stout ligature is applied under the clamp jaws, the sac is cut away, and the clamp is removed.

The ligation of the sac, just mentioned, is performed as in inguinal hernia. Several writers, notably Bayer[7] and more recently Beckman and Adson, have called attention to the analogy between spina bifida and inguinal hernia. I am of the same impression and believe, in addition, that the operative treatment, when possible, should be similar.

If the opened sac is found to contain cord or nerve tissue, these structures may in some instances be removed by blunt dissection, while the light clamp is still in place to prevent the escape of fluid and the entrance of infection. If necessary, the bony defect of the vertebral column may be enlarged to admit of such replacement. This removal of bone can be accomplished while the clamp is still applied. I have encountered cases in which the spinal canal was not large enough to receive the cord and nerve elements completely and others in which it was impossible to separate the thick ribbons of cord tissue from the sac. It is, of course, well understood, as mentioned previously, that operation in such cases promises little or nothing so far as relief of paralysis is concerned.

Fig. 7.—Tying stout transfixing ligature about base of sac, as in other forms of hernia.

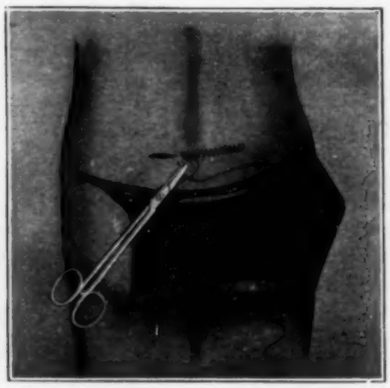

Fig. 8.—Closing skin wound with running suture of chromic catgut reinforced with collodion.

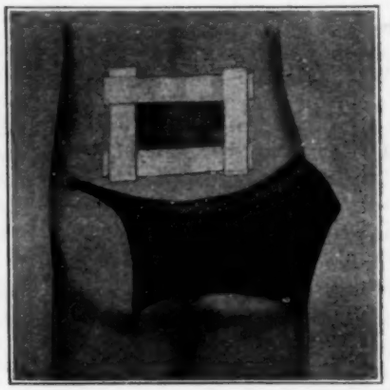

Fig. 9.—Gauze square covering wound; edges strapped with adhesive plaster painted with collodion.

After the neck of the sac is tied and the clamp removed, no attempt is made to close the bony defect by an osteoplastic operation. The danger of this step probably offsets the few and doubtful advantages it may provide. I have known of no recurrences of this form of hernia which might be traced to the omission of this step; I have found no record of such an accident, and I believe it must be rare. The muscles are drawn together over the stump of the sac, and the skin wound closed with a continuous suture of fine chromic catgut, either transversely or longitudinally, depending on which is the more easily accomplished. Hemostasis should be complete.

Procedures directed against wound contamination, which were begun by stitching of the rubber dam to the child's back, are now completed. Collodion is

7. Bayer, C.: Ztschr. f. Heilk., Berlin, **18**: 405, 1897.

applied over the wound line. Over this a strip of gauze is placed, and its edges glued to the skin with adhesive plaster straps. This gauze and adhesive plaster are then painted with the collodion solution, after which the rubber dam protective is drawn up and laid flat on the back, and its three remaining margins are glued to the skin, as was the underlying gauze, by adhesive plaster straps. Next a small triangular piece of adhesive plaster is so applied that a sharp point passes downward between the buttocks, with the base of its triangle overlying the straps of adhesive plaster securing the lower border of the rubber dam. The adhesive plaster is then covered with collodion so that the zone of operation is sealed against infection by excreta.

In certain rare forms of spina bifida, as in spina bifida occulta, the suggestions offered in this paper are, of course, without value. However, in one rare form, the anterior meningocele, a successful operation for which is reported by S. Roux,[8] the use of the clamp might remove many inconveniences. In the several forms of meningomyelocele, it is submitted that the application of the light clamp will facilitate and render more safe the additional steps required in the attempt to deal in a radical way with this condition. With the simple meningoceles it is believed that the careful application of the technic herein embodied will make the operative mortality of this form quite as low as that in the analogous condition of inguinal hernia.

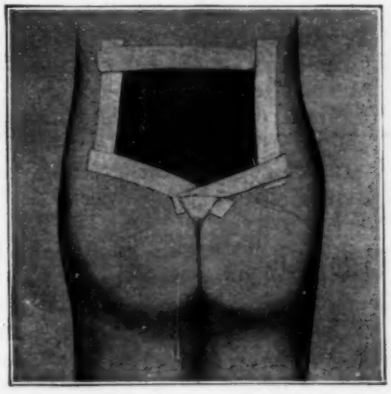

Fig. 10.—Rubber dam drawn up over wound and secured at edges with adhesive plaster straps coated with collodion.

Fig. 11.—Inverted position used by Babcock to prevent sudden escape of cerebrospinal fluid.

CONCLUSIONS

1. Spina bifida associated with increasing hydrocephalus is inoperable.

2. Operation should be performed in cases of spina bifida associated with paralysis only for the purpose of preventing subsequent ulceration and rupture.

3. A rubber dam sutured at one margin to the skin below the tumor, adhesive plaster, and plentiful collodion should be used to prevent fecal and urinary contamination.

4. A light, rubber-covered clamp applied to the neck of the tumor is the safest method of preventing the loss of cerebrospinal fluid and also of excluding infection from the cord.

5. The sac can usually be tied off as in inguinal hernia.

8. Roux, S.: Rev. méd. de la Suisse Rom. **38**: 47 (Jan.) 1918.

Civil Versus Military Syphilis.—All returning Canadian soldiers whose military history sheets bear the record of venereal disease are given the Wassermann test before being discharged. In August, 1918, 2 per cent. of those returning reacted, all tertiary, noninfectious cases, for no primary or secondary cases are permitted to return. The average number of reactions in the civil population is estimated at from 8 to 12 per cent., showing four to six times as much syphilis in the civil population as in the army. It is not the civil population that has to fear the soldier, but the soldier the civil population.—Adami, *Canad. Med. Assn. Jour.*

SURGICAL DRAINAGE FROM A BIOLOGIC POINT OF VIEW*

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The biologic defenses of the body against disease, trauma and the wear of age are wonderful, but they are not perfect. If they were perfect, man would live forever. Particularly interesting is the manner in which the body protects itself against injurious foreign substances. The epithelial lined body cavities have more or less specialized methods of protection. The stomach, for instance, by vomiting emits food that is spoiled, and many drugs that are irritating or disagreeable to the taste, and sometimes even rejects substances that are thought to be nauseating or noxious even though they are not. The excessive salivation when nausea occurs probably tends to dilute the offensive material, or to protect the walls of the mucous membrane. Vomiting undoubtedly is a habit that was acquired in the early days of evolution. The more refined drugs or poisons that are a result of chemical manufacture have not created a similar defense by the stomach, and are often retained.

Foreign irritating substances in the rectum, the bladder or the larynx are also expelled by muscular action. Irritating matter in the nose causes a profuse secretion, which tends to wash away the offending substance. An irritating foreign body in the eye causes at once a flow of tears in an effort to wash it away, and at the same time the spasm of the muscles of the eyelids is probably due partly to an effort to expel the foreign body, as well as to protect against further injury.

In endothelial lined cavities or in solid tissue there is an attempt to wash away foreign irritating matter. This is done by the pouring out of serum from the lymph circulation in the neighborhood of the foreign substance, which is accomplished by the reversal of the circulation in the local lymphatics, so as to empty their contents around the irritating material. This is really the chief basis of surgical drainage.

In surgical drainage, mechanical measures that are followed by fortunate results would appear ridiculous if no biologic conditions existed. In preventing infection of a fresh raw surface, or in the so-called walling off of healthy tissue from the products of infection, gauze is often placed over the raw surface or as a coffer-dam in the abdominal cavity, and an abscess is drained through the center of this gauze packing. If we could convert this into a mechanical proposition and imagine that the pus was a solution of methylene blue and that it was flowing over this raw surface which had been covered with absorbent gauze to pre-

* Read before the Southern Surgical Association, New Orleans, Dec. 18, 1919.

vent contamination, we know that both the gauze and the wound would be deeply stained. However, this method of protection does act in a beneficial manner, and a clean wound is often by this means kept from septic infection. The drainage of a peritoneal abscess is practically always up-hill and is usually successful. If mechanics were the only principle, how could an appendical abscess ever be drained by putting a tube down to it through the abdominal incision? The whole method of drainage really depends on the reversal of the circulation in the local lymphatics and is chiefly a biologic process. It is nature's effort to extrude a foreign substance.[1]

A splinter in the finger which becomes mildly infected will discharge a thin seropus for days. This is nature's effort to expel the splinter. After it has been removed, the wound rapidly closes; and the lymph circulation, which was in part at least reversed in an effort to extrude the splinter, assumes its normal course, and probably in twenty-four hours after the splinter has been removed there is no further discharge.

The peritoneum and its underlying structures in the abdominal cavity constitute an enormous lymph space, and the lymph is here abundantly poured out in response to an irritation. The insertion of a drainage tube causes a reaction in which there is a flow of lymph in an effort to expel the drainage tube. Drainage of the abdominal cavity prevents positive pressure in the septic region, and also the drainage tube is a stimulus for a reversal of the lymphatic circulation. The packing of a fresh wound with gauze causes a similar reversal of the lymphatic circulation; and though pus may flow over this gauze from a deeper focus, the lymphatics, instead of absorbing the pus, pour out lymph into and around the gauze to extrude it. The beneficial action of the cigaret drain, which is soon clogged with coagulated lymph, is comprehensible when we look on it as a stimulus for reversal of the local lymphatic circulation.

In regions of the body in which the lymph supply is less abundant than it is in the abdomen, unless the infected focus is very small it will be necessary to utilize gravity when instituting drainage, because there is not a sufficient flow of lymph to flush the septic cavity thoroughly and constantly, as is the case with abdominal drainage.

Drainage in surgical operations may be classified under three heads:

CLASSIFICATION OF SURGICAL DRAINAGE

1. Drainage of solid tissue or endothelial lined cavities:
   (*a*) Drainage of endothelial covered tissues of the abdominal cavity.
   (*b*) Drainage of other endothelial lined cavities, as pleura, joints.
   (*c*) Drainage of solid soft tissue, as muscle, fascia, fat.
   (*d*) Drainage of bone.
2. Drainage of inflammatory products from infected epithelial lined hollow viscera, as the gallbladder and the urinary bladder.
3. Drainage of hollow viscera in order to restore function or to secure physiologic rest.

1. DRAINAGE OF SOLID TISSUE OR ENDOTHELIAL LINED CAVITIES

Considering first 1 *a*, drainage of abdominal abscesses, we find, as has already been stated, that the abdomen has an enormous supply of lymph and that the successful drainage of an abscess in this region consists, first, of relieving the pressure in the abscess cavity by opening it and inserting a drain; and, second, of inducing a sufficient reversal of the lymph circulation by the presence of the drainage material to cause much of the septic products to be washed away along the drainage track. If the drainage material reaches the abscess cavity so that the pus is not under positive pressure, and if the drainage is sufficient in amount and of the proper kind to act as a stimulus for reversal of the lymphatic circulation, so much lymph is poured out that practically a continuous irrigation is going on from the local lymphatics along the tube or track of the drainage material, and it is a matter of but little importance whether the drainage material is pointed up or down. But in other endothelial cavities (1 *b*), such as the pleura or the joints, where the lymphatic supply is much smaller than in the abdomen or where the configuration is such as to make the drainage difficult, gravity must aid and the problem becomes more mechanical than biologic. Drainage here should be at the lowest point possible.

Drainage carried down to the sutured bowel frequently results in a fistula, particularly if gauze in the form of a cigaret drain is employed. The reversal of the lymphatic circulation in the neighborhood of a recently sutured intestinal wound, which will direct the current of lymph to the drainage, interferes with the normal process of repair in the intestinal wound, causes a weak fibrinous deposit, and diminishes the nutrition of the repairing bowel; consequently, the sutures readily break down and a fistula results.

In drainage of muscle, fascia and fat (1 *c*), gravity drainage must be considered, but the biologic problem is also prominent. An abscess in the thigh heals better if gravity drainage is instituted. The drainage material should be sufficient not only to carry off the secretion but also to excite the local lymphatics to reverse their circulation. The local lymphatics, being much less abundant than in the abdomen, cannot usually furnish enough lymph to cause the flushing out of the septic products, as occurs in the abdomen. In rapidly spreading inflammation, wide incisions and drainage are useful in relieving the pressure that is made by the binding fascia or skin, and in reversing the circulation of the lymphatics and so preventing absorption of much of the septic products into the main lymphatic trunks.

The old operation of "fence rail" incisions along the margin of an advancing erysipelas causes the pouring out of lymph from these cuts and the diversion of the lymph current, which would otherwise carry the septic products to further uninfected regions. The undermining of the skin and insertion of tubes or gauze drainage from point to point make the pouring out of lymph along the drainage material even greater than after a simple incision.

That the reversal of the circulation is the chief biologic process by which surgical drainage acts beneficially in solid soft tissue can also be recognized when there is a small abscess in a large amount of inflammatory exudate and it is impossible to locate the small abscess cavity. If a drain is placed in the immediate neighborhood of the abscess, it frequently opens into the drain. It seems probable that this occurs because the lymphatic current attempts to extrude the drain and so the products of the abscess are carried in this direction, and the abscess burrows to the tube.

The drainage of tissues whose lymphatic trunks have been clogged and where, consequently, edema is present depends on an effort to increase the lymphatic circula-

1. Horsley, J. S.: The Value of Biologic Principles in Surgical Practice, J. A. M. A. **72**: 1263-1266 (May 3) 1919.

tion or to create new lymphatic connections. In the operation of Handley in which long threads of silk are placed under the skin in edema of the arm, lymphatic channels form along the threads. In the operation of Kondoleon, the deep fascia of the arm or leg is split in order to promote an anastomosis between the deep and the superficial sets of lymphatics and so to divert the lymph current from the superficial to the deep lymphatic trunks.

Local edemas that are persistent are usually caused by blockage of the lymphatic channels and not by interference with the blood circulation. The edema that sometimes appears in the arm after a radical operation for cancer of the breast in which the axilla is thoroughly dissected is due to the removal of the lymphatics. If this immediately follows operation, it may disappear when the collateral lymphatic circulation is established; but when a late edema results it is frequently because the lymphatics have become plugged with cancer cells; and such an edema is ominous. Resection of the axillary vein if the lymphatics are in satisfactory condition is followed by but little if any swelling in the arm, and that of a temporary nature. A phlebitis causes edema only when the lymphatics around the vein are involved in the inflammation.

Drainage of wounds after radical operations for carcinoma in solid soft tissue should always be done. This is not so much in order to carry off the fluids that may accumulate in the wound, as an effort to reverse the circulation of the lymphatics which may be induced to pour out their contents in the direction of the drainage tube and so to discharge through this drainage cancer cells that have been left in the wound or that may have lodged in the open lymphatics. This is an important step in many radical operations for cancer, as after operations in the neck or on the mammary gland.

Drainage of bone (1 *d*) involves problems of a somewhat different nature, because of the structure of bone. Bone is compact, rigid tissue in which lime salts are arranged in an orderly way. On account of the rigid structure it is impossible for either the blood vessels or the lymphatics to form, or for the lymph current to reverse as readily as in soft tissue. Before drainage can be accomplished or any effective stand against infection can be made, the lime salts must be removed, so converting bone into what is practically soft tissue. For this reason, in areas of inflammation bone is always soft. Around an irritating substance in bone, whether accompanied by infection or not, lime salts are absorbed. When this is accomplished the offending material becomes loose and is prepared for extrusion. If, for instance, a piece of iron, as a screw used in plating bone, is inserted into a bone, the lime salts in the neighborhood of the screw and of the plate are absorbed. The screws, which may have been very tight and firm when inserted, gradually become loose. This induced osteoporosis around the screws and the metal plate is just the reverse of what is desired when a fracture is to be repaired, and it accounts for the frequency of nonunion after the plating of bones.

The numerous so-called abscesses at the roots of teeth are probably often the result of the reaction of the bone in the neighborhood to some material that was used in filling the cavities in the roots of the teeth. Undoubtedly apical abscesses frequently occur, but it is probably equally true that an osteoporosis sometimes interpreted as an apical abscess may be sterile and due to the reaction of the bone to the material with which the root of the tooth has been filled.

Because of the poor lymphatic supply of bone and its rigid walls which protect its vessels, a bone abscess may be more readily disinfected by means of strong antiseptics, such as phenol (carbolic acid), than if the abscess were in soft tissue. Here, as disinfection can be more thorough, the necessity for full drainage in the milder chronic infections of the bone is not so great if the diseased bone has been removed as it would be in soft tissue. Consequently, "fillings" or "bone plugs" are utilized.

2. DRAINAGE OF INFLAMMATORY PRODUCTS FROM INFECTED EPITHELIAL LINED HOLLOW VISCERA, AS THE GALLBLADDER OR THE URINARY BLADDER

Drainage here involves principles different from the drainage of an abscess that has formed in solid tissue. This drainage not only is for removing the products of infection, but serves a double purpose of also giving physiologic rest to the infected organ. The drainage of a septic gallbladder that may be filled with pus carries off the products of the bacteria and at the same time gives rest to the gallbladder by preventing distention, and this removes both a stimulus for contraction and the tension that would occur on the distended walls. Drainage of this type does not have to be gravity drainage. If a sufficient opening is provided in the general axis of the peristaltic current, it is all that is necessary. In draining an infected urinary bladder, for instance, an opening made at the top of the bladder is as satisfactory in securing results as an opening at the bottom.

When these hollow muscular organs are contracted, a small opening will insure the viscera keeping empty if it is made in due regard to the action of peristalsis. Even in such instances, however, the beneficial action of the drainage is not solely removal of the contents of the hollow viscera or the giving of physiologic rest. It seems highly probable that reversal of the lymphatic current is also of importance here. This appears to be borne out by the results of drainage of the bile tracts in inflammation of the pancreas. It is well known that chronic pancreatitis can best be treated by prolonged drainage of the bile tracts; and drainage of the common bile duct for this affection seems to be particularly effective.

The work of Deaver and Pfeiffer[2] on pancreatic and peripancreatic lymphangitis is interesting in this connection. They call attention to the anatomy of the lymphatic supply of the pancreas and its ultimate connection with the lymphatics of the bile tracts and gallbladder. They say:

> To the objection that infection to be carried into the pancreas must stem the efferent lymph current and force the valves, the answer can be made that every one has seen infection in cellular tissues proceeding in a reverse direction to the lymph current. Thrombolymphangitis readily diverts the normal lymph course, and infection easily destroys valves. The force of pathology here, as in so many other instances, perverted the normal function.

If infection of the pancreas can be through the lymphatic supply from the gallbladder or the galltracts, as Deaver and Pfeiffer assert, it seems that the method of relieving this infection is to reverse the lymphatic current and cause it to be diverted toward the drainage tube and the incision in the gallbladder or in the com-

2. Deaver, J. B., and Pfeffer, D. B.: Pancreatic and Peripancreatic Lymphangitis, Ann. Surg. **58**: 151-163, 1913.

mon duct, just as the lymph flow is reversed in the drainage of an abdominal abscess. Septic products that would be carried in the lymphatics from the infected gallbladder to the pancreas are thus diverted to the drainage tube in an effort to extrude it. If this diversion can be maintained sufficiently long to permit nature to build up the resistance of the pancreas to the infection and repair the damage already done, the patient may be considered cured. But if the drainage tube is removed too soon, there is no further stimulus for a reversal of the lymph circulation, and the pancreatitis recurs.

Too early resumption of function after drainage of inflamed hollow viscera frequently results in a recurrence of the inflammation. This may be due to one of three causes, or more probably to a combination of these causes: 1. There may be an accumulation of secretion that is not free from the products of the inflammatory process. 2. There is an interruption of physiologic rest. 3. There is a change in the lymph current from that which had been instituted by the drainage.

3. DRAINAGE OF HOLLOW VISCERA FOR PHYSIOLOGIC REST

In enterostomy, the operation may be done to sidetrack the normal contents of the hollow viscera and so to afford less work for the diseased tissue below the point of opening, as in colostomy for disease of the large bowel farther down. Drainage may be instituted to prevent distention of a hollow viscus and so induce rest in order that an operative wound may heal. This principle is put into practice in such operations on the bladder as for vesicovaginal fistula when a self retaining catheter is placed in the urethra, and in the introduction of a tube through the rectum and through the site of resection of the sigmoid or left colon in order to draw off the gas and prevent distention in the region of the operation. This principle of drainage is often utilized after the removal of stones from an uninfected gallbladder.

DRAINAGE MATERIAL

The material for drainage must be considered not only with regard to transporting the products that are to be drained, but also with regard to the biologic influence of the drain on the local lymphatics. Certain substances call for a more pronounced flow of lymph than others. Rubber, for instance, is not so irritating to tissue as gauze. When gauze is placed over a raw surface, the local lymphatics pour into the gauze quantities of lymph. This is nature's effort to extrude an irritating foreign substance. When the lymph has coagulated, the meshes of the gauze become entangled with the wound; and an effort to remove the gauze before this fibrin has softened results in tearing the delicate tissues of the wound and injures its granulations, causing bleeding. An ideal drainage material would be one which, on the one hand, is a pronounced stimulus for the lymph to be poured out along the drain, and, on the other hand, would not be sufficiently attached to the raw surface of the wound to injure it. This material has not yet been found.

Rubber drainage tubes are frequently used, and have the advantage of draining off inflammatory products readily; but they do not provoke such an outpouring of lymph as gauze would. Naturally, however, the larger the tube the greater the irritation, and the more pronounced the stimulus for a reversal of the circulation of the local lymphatics. Consequently, for draining an abdominal abscess, it is often found that a large tube does better than a smaller one, not because the smaller one is insufficient to carry off the serum or the pus, but because the small tube is not large enough to provoke a sufficient amount of reaction among the local lymphatics. Frequently the advantages of both gauze and rubber are combined by placing a gauze strip inside the tube or by wrapping strips of gauze in rubber tissue or rubber dam, which is called a "cigaret drain," and using this in addition to a tube. In this way the gauze which is exposed at the end of the cigaret drain causes a more pronounced flow of lymph than the rubber tube alone could produce, and the tube drains away the lymph that is thrown out to extrude the gauze and the tube. Drainage material should not remain too long in a wound, else it will act as the infected splinter mentioned above.

Combinations that are effective have been worked out to a large extent empirically. Sometimes strands of catgut, silkworm-gut, or strips of rubber tissue are inserted into a wound in which it is anticipated that there may be a collection of serum or broken down fat on account of the nature of the wound. This foreign substance, the drainage material, directs the current of the lymphatic flow toward itself and so prevents an accumulation in the tissues which might later become a culture medium for bacteria. An opened superficial abscess often needs no drainage material, for the necrotic products of the inflammatory process are a sufficient stimulus for drainage.

ENCAPSULATED FOREIGN BODIES IN THE PERITONEUM

If such foreign materials as gauze or cork are left in the abdominal cavity under sterile conditions, they are rapidly surrounded by a deposit of fibrin, as shown by Hertzler.[3] This fibrin, which is coagulated lymph, soon is covered with endothelium and takes on the characteristics of peritoneum. If the gauze is left for a number of weeks or months, it may intrude into a neighboring hollow viscus and be expelled, as this may be the point of least resistance and, consequently, of greatest pressure. Instances are recorded in which gauze that has been accidentally left after a surgical operation has been expelled by the bowel or by the bladder months or years later. Sometimes, however, the gauze is completely encapsulated with a cystlike wall and becomes so thoroughly infiltrated with fibrin that partial organization takes place. Portions of the gauze may be disintegrated and removed by phagocytes, and the connective tissue penetrating the rest of the gauze is so intimate that it may have to be dissected away with much difficulty.

3. Hertzler, A. E.: The Peritoneum, St. Louis, C. V. Mosby Company, 1919, **1**: 251-253.

Mental Hygiene.—As far as treatment and care of mental abnormals are concerned, it is necessary in each locality to determine the number of feebleminded, epileptic, insane and psychopathic among the population, to inquire into their individual needs, and finally to provide facilities for scientific care and treatment. In connection with prevention the public must be informed concerning certain salient facts relating to mental disorders and taught through newspaper and magazine articles, leaflets, and public addresses, what is practical in the way of preventive measures. Prevention and treatment are intimately bound together, because when the feebleminded, for example, are segregated in institutions and farm colonies, they are prevented from reproducing their kind.—C. M. Hincks, *Am. J. Pub. Health* **9**:353, 1919.

LATE RESULTS IN THE RADIUM TREATMENT OF CANCER OF THE UTERUS

J. LOUIS RANSOHOFF, M.D.

CINCINNATI

What place shall radium have in the treatment of carcinoma of the cervix? This is a question of vital importance, as it concerns the treatment of a disease of universal distribution, a disease which in spite of the efforts of the world's greatest surgeons continues to take its large annual toll of suffering and death.

Carcinoma of the cervix has long been one of the most fruitful fields for radium treatment. Thousands of cases are annually declared inoperable and must needs be aided by some other means than surgery. Because of its unusual accessibility, radium can be brought into close contact with the neoplastic cervix where it can exert its direct influence.

Radium has long been granted its position as the agent of choice in the treatment of inoperable cervical carcinomas. The question which now concerns us is whether it shall supplant the radical operation in the treatment of so-called operable cancers of the cervix. I say so-called advisedly, as the question of operability depends entirely on the judgment of the individual operator, and in numerous instances cannot be definitely decided until after the abdomen has been opened.

With the publication of an account of the Wertheim operation in 1898, and its adoption by the leading gynecologic clinics of the world, it was thought that a step forward had been taken in the war against uterine cancer; but now, after two decades, the Wertheim operation is still on trial. One of the most distressing phases of carcinoma of the uterus is the low percentage of operability among those patients applying for relief. In a decade, Clark[1] operated on sixty patients and estimated that during the same period more than 300 were refused operation, an operability of only 15 per cent.

In Jacobson's[2] collection of 5,027 cases, only 1,720, or a little over 31 per cent., were considered operable. In reviewing the statistics of the Wertheim operation it would seem that the higher the percentage of operability in a given series of cases, the higher the percentage of operative deaths. Probably more discouraging than the small percentage of operability is the high immediate mortality. The operative mortality of Jacobson's collected cases was 18.25 per cent. These figures, bad as they are, nevertheless leave too optimistic an impression, as they represent the work of the most skilled gynecologists of the world. In the hands of the great body of operating surgeons, the mortality is undoubtedly far larger.

Peterson,[3] in his own cases, had a total primary mortality of 25.4 per cent. In speaking of the operation he says:

> Unquestionably added experience has strengthened my belief that the extended operation for cancer of the cervix is an exceedingly dangerous one, always attended by high primary mortality. No one will be more glad to discard the radical abdominal method than will I, if I can be shown that more patients can be ultimately cured by less dangerous methods.

Turning again to Jacobson's statistics, of 1,090 patients operated on that were followed, there were 386 cures, or 35.41 per cent. of the patients that were traced, or only 19.32 per cent. of the entire number of patients operated on; but what is most striking is that only 11.72 per cent. of all those patients applying for treatment were cured.

Clark has struck the keynote of modern opinion of the Wertheim operation. He says:

> If an operation or other therapeutic process is to have a permanent place in our armamentarium it must be sufficiently easy to make it available not for a few skilled specialists, but for the great body of surgeons working in every quarter of this and other countries.

In these days of low mortality percentages attending nearly all major operations, no operation can possibly gain headway which combines with it a shockingly high mortality and a large majority of distressing and desperate sequelae. The effect on the lay mind must be taken into consideration, for while one may have over 50 per cent. of ultimate cures among those patients that survive the operation, the effect on the average intelligent citizen is abhorrent, if for this number of survivors there have been twenty-five deaths, and for the other twenty-five a wretched existence attended by repulsive postoperative sequelae, followed by a painful and lingering death. It is possible that when we make a final summary of our combined experiences we may have to accept the conclusion that a less radical operation, even though it saves fewer patients, may be preferable when attended by a low surgical mortality and few or no operative sequelae.

A CONTRAST OF METHODS

Disregarding for a time the end-results of radium treatment of cancer, it is interesting to compare the two methods of treatment from other standpoints. Contrasted with the high mortality of the extensive operation for uterine cancers, there is practically no mortality from the radium treatment. In place of a dangerous operation with its attendant suffering, long stay in the hospital, and distressing postoperative sequelae, there is the simple radium treatment with a few days' stay in the hospital, no danger and little pain.

Again, while less than one third of those patients who present themselves for treatment are fit subjects for the radical operation, radium treatment is available for all classes of cases, no matter how far advanced. The immediate result of treatment, and the palliation of symptoms, the relief from hemorrhage, pain and foul discharge have been too frequently described to warrant further comment.

The conclusions published by Dr. Joseph Ransohoff and myself[4] in 1916 remain unchanged. That is, in all cases the immediate results have been without exception good. The concern now is, Can radium permanently cure cancer of the cervix? If so, does the percentage of cure equal that of operation? If that is true, the conclusion is obvious.

The pendulum is swinging toward radium as the method of choice in the treatment of operable cervical carcinomas. With the report of later results, its position is becoming more definitely established. As early as 1914, there were some operators convinced that radium should entirely supplant operation. Dobbert[5] in that year, from an observation of twenty-four cases,

1. Clark, J. G.: The Radical Abdominal Operation for Cancer of the Uterus, Surg., Gynec. & Obst. **16**: 255, 1913.
2. Jacobson, quoted by Janeway: Surg., Gynec. & Obst., September, 1913.
3. Peterson, Reuben: Surg., Gynec. & Obst. **23**: 280 (Sept.) 1916; Tr. Am. Gyn. Soc., 1916.
4. Ransohoff, Joseph, and Ransohoff, J. L.: Ann. Surg., September, 1916.
5. Dobbert, T.: Ergebnisse der Behandlung des Gebaermutter-Krebses mit Radium, St. Petersburg med. Ztschr. **39**: 97, 1914.

eighteen inoperable and six operable, concluded that it was justifiable to use radium alone in the treatment of operable cases. Cheron[6] reported an inoperable case in which radium was used. Two and one-half years after treatment, death occurred from intercurrent disease. Necropsy revealed no trace of cancer.

In 1915, Döderlein[7] definitely advocated the use of radium in operable cases. Pozzi,[8] in 1915, had given up the Wertheim operation in borderline cases and treated them with radium alone. In cases which are decidedly in their inception, a simple vaginal hysterectomy is done, followed by prophylactic radium treatment. Flautau,[9] in 1915, definitely relinquished operation in favor of radium. The title of his article was, "May We Trust Radium Alone in the Treatment of Uterine Cancers?" In the same year, DeGrais[10] reported both operable and inoperable cases free from recurrence four years after treatment.

A very important contribution is one of Recasens, a Spanish surgeon. In the beginning he used radium only in those cases too far advanced for operation; but later he used radium to the exclusion of operation. He believes that in very early cases, a cure by radium is almost certain.

RESULTS IN THE AUTHOR'S SERIES OF CASES

As Dr. Joseph Ransohoff and I began the use of radium in the treatment of malignant disease in February, 1914, this report represents the results of nearly six years' experience.

On my return after two years in the army, I was interested in the fate of those patients whom I had seen in the three years prior to my entrance into the service. With the exception of the last case, which was two months later, this series includes those cases observed between February, 1914, and April, 1917, a period varying from two and one-half to nearly six years. As far as possible, all patients were traced; those that could not be located were regarded as having succumbed to the disease,

There are in all thirty-two cases. This includes all patients observed, varying from those whose cases were operable to those in a terminal stage of sepsis. There are also included cases in which for one reason or another the treatment was not complete. It is interesting to note that eight of these patients had what was considered an incomplete course of treatment, that is, three or less radium applications. The average number of applications for all cases, healed and fatal alike, was six. There were six recurrent and twenty-six primary cases treated. There were two cases of cancer of the fundus, and thirty of cancer of the cervix, so that this report deals principally with cervical carcinoma.

Of this entire series there were six patients, or 19 per cent., well and free from all evidence of disease at intervals varying from nearly three to five and one-half years after treatment. In the two cases of carcinoma of the body of the uterus, the results have been disappointing. Neither of these cases, however, was operable. Nevertheless, I am of the opinion that these patients when possible should be operated on rather than treated with radium, as the operative mortality is low and the end-results good. One of these cases is worth reciting in detail:

Miss C. M., aged 34, referred by Dr. Palmer, had been having uterine hemorrhages for eight months. Three weeks before my examination, a curettage revealed an adenocarcinoma of the body of the uterus, which was confirmed by microscopic examination. The first radium treatment was given, July 3, 1914. In July, 1917, the patient was well. During the fall of 1918, she developed a pernicious vaginal hemorrhage, which was controlled by roentgen-ray treatments. Examination revealed what was thought at that time to be a large fibroid. A month before, these hemorrhages had again recurred. A piece was removed for section and proved to be an adenocarcinoma. One reason for the persistence of this tumor was probably the age of the patient, as it is well known that carcinoma is far more malignant in young persons than in those who are older.

Deducting the eight cases in which an incomplete series of treatments were given, we have 25 per cent. relief from symptoms during this period. There has been no definite operable case in which the treatment has not been successful.

REPORT OF CASES

CASE 1.—Mrs. I. F., aged 53, six months before had noticed sudden pains in the lower abdomen and for four months had suffered from bleeding from the uterus. The family history was negative. Examination, April 28, 1914, revealed an ulcerating epithelioma involving the entire anterior lip of the cervix. The uterus, however, was freely movable. A small piece removed for examination revealed epithelioma. The first radium treatment was given, April 28, 1914, and the last radium treatment, Sept. 11, 1914. Hemorrhage ceased after the first three treatments, and there had been no evidence of recurrence. The patient was in perfect health. In July, 1919, examination revealed a normal movable uterus, with no evidence of any ulceration, a freedom from recurrence after five and a half years.

CASE 2.—Mrs. K. H., aged 71, referred by Dr. Bachrach, for seven months had had severe vaginal hemorrhages. Examination disclosed carcinomatous degeneration of the entire cervix. There was a microscopic diagnosis of carcinoma. The uterus, however, was movable. The first radium treatment was given, May 1, 1915, and the last treatment, May 29, 1915. There were in all four treatments. The patient was reported well, April, 1919, a freedom of recurrence after four and one-half years.[11]

CASE 3.—Mrs. S., aged 45, referred by Dr. Oliver, had been bleeding off and on for eight months. She was very much exsanguinated and was severely emaciated. Examination revealed a cancerous mass filling the vagina. A microscopic diagnosis of carcinoma was made. Under an anesthetic the mass was curetted away, the vagina was cauterized, and 100 mg. of radium were inserted for twenty-four hours. March 20, 1915, the first treatment was given, and the last treatment was given, May 7, 1915. April 25, 1919, examination revealed the patient perfectly well and able to do her work. Her weight was 124½ pounds. Sept. 10, 1919, a rectovaginal fistula developed. Examination under anesthesia disclosed a very small fistula in the posterior vaginal wall, communicating with the rectum. This fistula was situated just above a very dense fibrous stricture. Under an anesthetic, the stricture was stretched and a very careful examination revealed no evidence of cancer. Here the stricture was probably due to the concentration of a large number of treatments in a short time, necessitated by the desperate nature of the case. An examination made a week ago demonstrated the fistula nearly healed and absolutely no evidence of any tissue remotely resembling carcinoma, a freedom from recurrence for four and a half years.

CASE 4.—Mrs. S. S., aged 65, referred by Dr. S. Wolf, had been bleeding for eight months. Examination disclosed the

6. Cheron, H.: Fortschr. a. d. Geb. d. Roentgenstrahl. **21**: 229, 1913.
7. Döderlein, A.: Unsere weiteren Erfahrungen mit der Mesothorium Behandlung des Carcinoma, München. med. Wchnschr. **61**: 225, 1914.
8. Pozzi, S.: Rev. de. gynec. et de chir. abd. **23**: 2, 9, 264, 1914-1915.
9. Flautau: Zentralbl. f. Gynäk. **39**: 611, 1915.
10. DeGrais, P.: Ann. de gynec. et d'obst. **11**, 1915; Surg., Gynec. & Obst. **22**: 298 (March) 1916.

11. Since this article was written, this patient has died of some intercurrent disease, at the age of 76.

cervix entirely replaced by neoplastic tissue. There were a foul discharge and hemorrhage. A microscopic diagnosis of carcinoma was made. The first treatment was given in February, 1916, and the last treatment in April, 1916. Examination, November, 1919, revealed the patient in excellent health. The vaginal vault and the remains of the cervix were covered by smooth, pliable mucosa; there was no evidence of a recurrence, a freedom from recurrence of nearly four years.

CASE 5.—Mrs. J. W., aged 50, referred by Dr. Newfarth, with symptoms present for eight months, had had severe hemorrhage. The site of the cervix was occupied by a crater and cancerous vegetation. It was probably a borderline case. Under gas oxygen anesthesia, a curettage was performed. A microscopic diagnosis of carcinoma was made. The first treatment was given, December, 1916, and the last treatment, July, 1917. Examination, December, 1919, revealed a woman in excellent health, with no evidence of recurrence. There was a small scar in the vault of the vagina covered with normal mucosa, a freedom from recurrence for three years.

CASE 6.—Mrs. B., aged 54, referred by Dr. Aitkin, was operated on for cancer of the uterus two years before. She had had hemorrhage for the past two months. The vagina was narrow, and there was a recurrence in the vault. The first treatment was given in June, 1917, and the last treatment in December, 1917. The patient reported by letter, November, 1919, that she was well, a freedom from recurrence of two and a half years.

COMMENT

We have here 19 per cent. of those patients treated free from recurrence for from two and one-half to five and one-half years; one patient for five and one-half years; two patients for over four years; one patient for three years, and one for two and one-half years. The latter case may perhaps be a little too recent to be definitely called cured. This percentage of cure may seem small, but it compares favorably with that following operation. Deducting the eight cases in which the treatment was incomplete raises the percentage to 25.

The remaining twenty-six patients are either known to have died of the disease, or have at present a recurrence, or could not be traced.

Just a word here as to technic, that is, the question as to whether the radium treatment should be preceded by a curettage or the cautery. From our observation it would seem that the results were the same one way or the other; therefore we have definitely given up both curettage and cauterization as preliminary to radium treatment, and now we depend entirely on the radium.

If the cases were chosen for radium treatment with the same degree of care that they are chosen for operation, I feel confident that the percentage of cures would be very large. This is not, however, the function of the radium workers, who should give an opportunity for relief to every person who seeks treatment.

There is scarcely any case so far advanced that some improvement may not be obtained from radium treatment. In this work it should be the province of all observers not to work for statistics, but to give every patient a chance, if not for a cure, at least for an amelioration of symptoms.

Contrast the results of these thirty-two cases in which there was a 19 per cent. cure, with the Jacobson statistics, in which there was only an 11 per cent. cure. Also remember that there was no fatality from this entire series of treatment. Contrast this with the 18.25 per cent. mortality from the radical operation. Contrast again the economic saving of weeks in the hospital, the postoperative suffering, and the unbearable sequelae. I do not hesitate to state that in my opinion radium treatment should entirely supplant operation, not only in the treatment of inoperable cases, but also in the treatment of operable cases of cancer of the cervix.

Seventh and Race streets.

METASTATIC ABSCESSES OF THE THYROID ASSOCIATED WITH HYPERTHYROIDISM

REPORT OF CASE FOLLOWING REPEATED ATTACKS OF SORE THROAT

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The case here reported is of interest because of its possible bearing on the etiology of exophthalmic goiter. In spite of the recent advances made in the study of this disease, its etiology is still unknown. This case directs our attention to the possibility of a bacterial cause. The similarity of symptoms in acute febrile diseases and thyrotoxicosis is well known. It is therefore possible that bacteria, now recognized as the cause, even though remote, of some chronic, so-called degenerative diseases, such as some forms of asthma, nephritis, arteriosclerosis and subacute and chronic arthritis (which until very recently were considered beyond the realm of bacteria) may play an equally important rôle here as well.

REPORT OF CASE

History.—Mrs. B., aged 46, a native of the United States, and a life long resident of New York City, with a negative family history, and with a previous history of scarlet fever at 16, from which she had made a good recovery, with good habits, drinking tea and coffee moderately, had had a goiter for the past twenty years. As far as she recollected, it had come on at about the age of 22. It was small at first and gradually grew until at the time of examination it was quite large (about the size of a small orange). This goiter had not increased in size for the past five years, according to the patient's statement. The menstrual history was negative.

Examination.—The patient first came under my observation about August, 1916, when she had a peritonsillar abscess on the left side. The temperature was 104, and the pulse 100. There were fairly large, irregular, vascular and inflamed tonsils and a peritonsillar abscess, with bulging of the supratonsillar tissues on the left side. Over the thyroid region there was a fairly large tumor, evidently cystic in nature and slightly larger toward the right side. No tenderness was felt over the tumor, and no thrill or bruit. Because of the presence of the goiter a thorough search was made for signs and symptoms of hyperthyroidism, but none were found.

Treatment and Results.—The peritonsillar abscess was incised, and the patient recovered without any complications and without any symptoms referable to the thyroid appearing.

After about six months she was taken ill with a sore throat, and soon developed what clinically looked like a double quinsy. She was quite ill at this time, the temperature ranging between 103 and 105 F., and with a good deal of glandular enlargement in the cervical and submaxillary groups. Both supratonsillar areas were incised, but no pus was obtained; nor was her general condition improved. The redness and edema of the throat, tonsils and soft palate persisted, and the temperature remained at about 105. The patient became very toxic, and I took her to Lebanon Hospital, where she was admitted to Dr. M. Lederman's service.

Dr. Lederman reincised the throat, but obtained no pus. Several throat cultures showed no diphtheria, but did show the presence of streptococci and pneumococci. In view of the

irregular, high temperature and the absence of pus, a diagnosis of streptococcus sore throat was made. During the patient's stay in the hospital, traces of albumin, and hyaline and granular casts were found in the urine. The temperature, however, was reduced by lysis. The kidneys cleared up to a great extent, and she went home in good condition.

About seven weeks after leaving the hospital, she began to complain of some pain over the right side of the neck in the area of the right lobe of the enlarged thyroid, which was quite tender. She also complained of general weakness, some dyspnea on exertion, palpitation, and occasional diarrhea.

Examination revealed a rather striking change in the patient's general appearance. She looked markedly emaciated, had a very decided fine tremor of the hands and tongue, and a rapid pulse, from 150 to 160, but regular. The heart was enlarged; there were ringing sounds, but there was no adventitious sound, and there were no eye signs. The thyroid was larger than it had been, and moderately tender. There was a distinct thrill and, at times, a bruit over the thyroid; the temperature was 100.

A diagnosis of hyperthyroidism was made. The tenderness was thought to be the result of a possible hemorrhage with sudden enlargement and pressure on adjacent nerves.

The patient was put to bed, the diet was regulated and sedatives were given, but no improvement resulted. After about four weeks of medical treatment, I advised an operation, but she refused. Roentgen-ray treatment was, therefore, tried for about three months at Mount Sinai Hospital in the outpatient department, but no improvement was noted. The patient finally decided to be operated on, and she was admitted to the Presbyterian Hospital for operation.

During this period, while under medical and roentgen-ray treatment, she had two attacks of sore throat similar to the ones described, but of a milder character. Both these attacks were treated conservatively, and the patient recovered without incision of the edematous soft palate.

While in the Presbyterian Hospital she was observed on the medical service for several days, and a diagnosis of hyperthyroidism was made by the internists. She was then transferred to the surgical service for operation.

At the operation, which was performed by Dr. McWilliams under gas and oxygen anesthesia, the exposed gland was found to be cystic, especially in the right lobe. This lobe, together with the isthmus and part of the left lobe, was removed.

On sectioning, the gland was found to consist of multiple abscesses filled with a greenish-yellow pus. The report from the laboratory stated that cultures had been made of the pus, and that Type IV pneumococci were recovered. The gland showed areas of acute and chronic inflammation, as well as an increase in glandular material.

The patient's subsequent course in the hospital was rather stormy. After the operation, she developed a parotitis on the left side with edema of the face. She eventually made a good recovery. The pulse rate decreased, and the muscular tremor disappeared gradually. Now, two and one-half years after operation, she is free of all symptoms or signs of hyperthyroidism.

COMMENT

This case of hyperthyroidism appears to have followed repeated attacks of acute peritonsillar and pharyngeal infection. We may, therefore, feel justified in emphasizing these points:

1. Thyrotoxic symptoms may appear in cases of simple goiter, the result of an acute infection.

2. Bacteria may be a factor in the causation of exophthalmic goiter: if not directly so, at least effecting such changes in the physiology of the gland as to make its appearance likely.

3. Suppuration of a thyroid gland should be suspected when there is even slight pain and tenderness over the gland with enlargement, especially when there is a history of a preceding infection.

1220 Grand Concourse.

WORKMEN'S COMPENSATION, WITH ESPECIAL REFERENCE TO LOSS OF VISION

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Surprise is often expressed concerning inharmonious medical expert testimony. Doubtless dishonest medical evidence is sometimes heard, but most medical opinions expressed in court are honest, and divergent views between witnesses are dependent on varying degrees of knowledge, and personal experience. The human body and its diseases, possessing but little uniformity, can be variably interpreted by a plurality of honest and intelligent observers, especially in borderland cases in which demarcation lines are vague and indistinct.

Long experience in examining plaintiffs for injury cases inevitably produces skepticism and demands for objective indications, as a high percentage of such cases is, more or less, based on fraudulent claims, fostered and nourished by unprincipled attorneys, unwise friends, and the general desire to extract money from wealthy corporations. Employees have themselves to blame, therefore, for having built a structure inimical to their own interests, while employers may be congratulated on a more benevolent attitude toward their employees—even if produced primarily by strikes, unionism, legislation, etc., induced by previous unjust demands on labor by capital. Employers now desire to produce and maintain friendly relations with their employees, and demonstrate such intentions by good wages and working conditions, hospital care, willingness to concede financial awards for honest personal injury claims, etc., whereas union labor, with its bosses and organizations, seems determined to produce conditions as hard as possible for those men endeavoring to conduct the business of our country.

Honest medical expert testimony is, therefore, influenced by various conditions, and as a consequence is frequently inconclusive; and any proper effort toward systematization should fall on receptive minds.

Owing to variable conditions, compensation tables for damages cannot be invariably equitable, and should not be so regarded; they are merely basal conclusions on which to work. An accepted compensation table for monocular visual losses is an unaccomplished necessity; yet it can merely become a steadying foundation for judicial consideration, and medical testimony will always be necessary for learned opinions and interpretations of present and future conditions, such as corneal scars, retinal and optic nerve diseases, and vitreous opacities. State laws and medical opinions differ as to whether vision (after injury) should be estimated with or without glasses, forgetful of the fact that almost all eyes improvable by glasses possess refractive errors antedating the injury. As a rule, therefore, a claimant should be required to accept the visual results obtainable by glasses with the exception of monocular traumatic cataract cases in which the required lens is so strong as to create annoyance, through discrepancy, diplopia, etc. Under such circumstances, the chief advantage of an operation is to demonstrate to the patient the visual capacity of the eye, and to restore actually a seeing eye to the injured that can be used in case of accident to the other eye. This is a valid asset, and should be considered when judgment is awarded, especially when all expenses are paid by the employer.

ESTIMATION OF OCULAR DAMAGES

It has been asserted that the payment of sick bills by employers has no significance, for such and such is the law and there is an end to it. But not all laws are just laws, and the justice of this law is questionable. Why should an employer be held liable for accidents over which he has no control? If he furnishes good tools, good wages, a good shop, well ventilated and lighted, and equipped with accident preventing devices, and an employee through ignorance, carelessness or obstinacy is injured, why should the employer be held liable? For these cogent reasons, legislatures and courts should not deal with employers too harshly; heavy responsibilities have been thrust on them and they should be given all reasonable benefits of doubts, instead of being buffeted and excoriated whenever opportunity presents itself. It therefore seems reasonable and just, first, that ocular damages should be estimated on conditions prevailing at the time of litigation, unless reasonably positive and reliable evidence is obtainable as to future conditions; second, that visual conditions should be estimated with glasses, except, third, after cataract operations, when the visual result might be measured on a 50-50 basis; this means, for instance, that if, after a cataract operation, good vision is obtained of, say, 20/20 or 20/30, by a glass, the vision may be reckoned as about one-half of normal and compensation paid accordingly.

Referring to unjust legislation, how unfair to both employer and employee is the law rendering the employer responsible for the loss of both eyes, when one eye was lost before the employee entered his service, and his remaining eye has been destroyed while working for the employer. The law is unjust to the employer because he was not responsible for the loss of the first eye, and it is unjust to the employee because it renders the securing of work difficult, as many employers dislike the presence of the maimed, and refuse the assumption of unnecessary legal and financial responsibilities, however much they might desire to assist the handicapped. Besides this, a one-eyed man is more likely to be injured than a two-eyed man, because he can see on only one side of him, and also for the reason that if his seeing eye is injured during work by a cinder, etc., he is quite helpless, as he cannot see through the other eye. Thus a law intended to benefit the laboring man is obstructive to his prosperity, as it often legislates him out of work. The law should be changed and the employer should be held responsible only for the loss of the eye injured during his own service. The employee cannot even legally give the employer a written document releasing him from responsibility concerning the first eye if the second eye is lost during his service. This is almost, if not quite, unconstitutional, as it debars the employee from exercising the right of personal privilege.

Among the very frequent causes of personal injury litigation are the varying losses of vision in one eye, necessarily followed by estimations concerning visual impairment. This produces discrepant expert testimony, leaving the court in mental uncertainty, usually resulting advantageously to the plaintiff—he being the poor unfortunate, and the employer representing what is called corporate wealth.

As Snellen's test types represent to ophthalmologists varying degrees of vision, it has been assumed that Snellen's fractions must also represent varying losses of vision, and that, for instance, 20/40 indicates 50 per cent. of visual loss, 20/30, 33⅓ per cent. of visual loss, etc. Such conclusions are erroneous and misleading, for Snellen and his followers never intended these fractions to indicate visual insufficiencies—they were merely an international language interpreting ocular refraction, and I am confident that Snellen himself would be astonished and amused at the absurd use of his fractions in our courts, in the awarding of damages to ocularly injured plaintiffs.

It must be evident to all who intelligently and impartially consider this subject that 20/40 does not indicate 50 per cent. loss of vision, nor 20/30, 33⅓ per cent. loss of vision. Indeed, 20/30 is practically no loss of vision at all, and does not reduce a man's earning capacity one cent a year. Technically, it represents a small visual loss and should be so regarded; but practically, the loss is almost negligible. Why, then, should courts continue such erroneous calculations, entailing great and unjust financial losses on employers, accident insurance companies, etc.? The mistake was natural, especially as it received partial ophthalmologic sanction; and once begun, the custom prevailed, particularly as no saner or more accurate method endorsed by ophthalmologists was proposed. If ophthalmologists will propose and endorse a fair and simple table of compensation for visual losses, of reasonable accuracy, there can be little doubt that our courts will adopt such a table, thus removing at least one element of doubt and discord from our tribunals. It must be remembered, however, that such a table must be exceedingly simple, and devoid of all technicalities, as otherwise it will never be even considered by our courts.

While various compensation tables have been proposed by which to estimate monocular visual losses, no table has as yet been suggested on which all interested factions seem to unite, although they all arrive at about the same financial conclusions; and meanwhile the courts continue delivering unjust decisions, guided by palpably erroneous deductions. In the interest, therefore, of fairness, simplicity and brevity, I submit a table, recently adopted by the Chicago Ophthalmological Society, which it is hoped may be universally and uniformly adopted. In constructing a compensation table for monocular visual losses in working-men, three points must be considered:

1. What constitutes industrial blindness in one eye?
2. What is the maximum legal compensation for such blindness?
3. What are fair and diminishing percentages of visual losses from the maximum to the minimum?

Concerning industrial blindness, many opinions are possible. Real blindness in its last analysis means a loss of light perception. I consider an individual industrially blind whose vision is insufficient for ordinary work. The injured may be unable to continue a habitual avocation; but if sufficient vision remains to perform ordinary work by ocular assistance, industrial blindness does not exist. What, then, constitutes "industrial blindness"? The answer must be more or less arbitrary. After consulting with many ophthalmologists, lawyers, industrial commissioners and insurance managers, the Chicago Ophthalmological Society arbitrarily concluded that vision worse than 20/200 constitutes industrial blindness. This opinion is, of course, open to discussion, but it is not remote from a fair conclusion to both employer and employee. Let this view, therefore, be tentatively assumed, and let it be said for the purpose of progress that vision worse

than 20/200 represents industrial blindness or 100 per cent. loss of vision, entitling the injured to the maximum compensation for monocular blindness allowed by the state law. This varies in different states, but in Illinois it entitles the injured to 100 weeks of compensation at $12 a week, or $1,200. The minimum to be paid for the total loss of one eye is $6 a week. In case the maximum or $12 a week is paid, the amount is increased $1 a week for each child of the applicant under 16 years of age, up to and including three children. In case the minimum or $6 a week is to be paid,

COMPENSATION TABLE FOR VISUAL LOSSES OF ONE EYE

20/20	indicates	100%	of	visual	efficiency	and	no	loss	of	vision
20/30	"	94.5%	"	"	"	"	5.5%	"	"	"
20/40	"	89.0%	"	"	"	"	11.0%	"	"	"
20/50	"	83.5%	"	"	"	"	16.5%	"	"	"
20/60	"	78.0%	"	"	"	"	22.0%	"	"	"
20/70	"	72.5%	"	"	"	"	27.5%	"	"	"
20/80	"	67.0%	"	"	"	"	33.0%	"	"	"
20/90	"	61.5%	"	"	"	"	38.5%	"	"	"
20/100	"	56.0%	"	"	"	"	44.0%	"	"	"
20/110	"	50.0%	"	"	"	"	50.0%	"	"	"
20/120	"	41.0%	"	"	"	"	59.0%	"	"	"
20/130	"	36.5%	"	"	"	"	63.5%	"	"	"
20/140	"	32.0%	"	"	"	"	68.0%	"	"	"
20/150	"	28.5%	"	"	"	"	71.5%	"	"	"
20/160	"	23.0%	"	"	"	"	77.0%	"	"	"
20/170	"	18.5%	"	"	"	"	81.5%	"	"	"
20/180	"	14.0%	"	"	"	"	86.0%	"	"	"
20/190	"	12.0%	"	"	"	"	88.0%	"	"	"
20/200	"	10.0%	"	"	"	"	90.0%	"	"	"

the amount is increased 50 cents a week for each child of the applicant under 16 years of age, up to and including three children.

Two points in the construction of a compensation table may be said to be now finished, namely, the meaning of industrial blindness, and the maximum compensation payable for this misfortune. The latter, it must be remembered, is definitively settled by most states and we have nothing to say about it. Individuals desiring personally to assume financial responsibility for expensive accident insurance are at liberty to do so; but when insurance is assumed and paid for by the employer, $1,200 is the maximum amount payable for the loss of one eye in Illinois. The last step to be taken in constructing a compensation schedule is fairly and equitably to grade down the percentages and compensations, to accord with the amount of vision that is lost. This has been attempted in the accompanying Chicago Ophthalmological Society table.

EXAMINATION OF APPLICANTS BEFORE EMPLOYMENT

Before the subject of compensation for monocular visual deficiencies is dismissed, it seems desirable to suggest to employers of labor a simple method for extensively reducing the frequency of claims for personal injury, not only for ocular damage, but for all other accidents as well. Reference is here made to the skilful physical examination of applicants before assignment to employment. Perfunctory examinations should be discountenanced, as errors in either direction may lead to unfortunate results. Eye and ear examinations, for instance, should be performed by competent specialists, that correct ocular and aural conditions may be ascertained. Two instances will demonstrate the necessity for such examinations before employment:

CASE 1.—A man received a slight head blow three weeks after obtaining employment. Shortly after he claimed blindness in one eye. Examination disclosed old chronic simple glaucoma with atrophied disk.

CASE 2.—A man was struck on the head by a piece of coal; no wound was produced. In five weeks he complained of deafness and discharge from one ear. Examination disclosed an old chronic otorrhea, necrosis, foul discharge, and tympanic polypi.

In spite of convincing medical testimony, both men recovered damages. If these men had been properly examined before employment, both these diseases would have been detected, and litigation would probably not have been begun, but if begun would have been unsuccessful. The proper examination before employment of applicants for work is an economical necessity, but it is useful only if properly performed by skilful and conscientious physicians. In this way physical records are established that are bound in many instances to save, in the aggregate, enormous sums of money—much more, in fact, than the cost of proper medical examinations. Besides this, many employees have unknown physical infirmities which, when disclosed, can be cared for, and perhaps cured, to the great satisfaction of the employees themselves. Finally, when bodily imperfections are understood by both employer and employee, such knowledge can make employers more considerate of the afflicted, and inspire them to offer suitable occupation for individual needs. Some labor leaders demand the abandonment of physical examinations, thus clearly disclosing their sinister intentions, and ignoring the fact that such examinations should be welcomed by both honest employers and honest employees. Nor can the idea be ignored that, if employers are to be held liable for accidents, they certainly have a right to know the physical conditions of their employees before they assign them to work.

7 West Madison Street.

ENDOTHELIOMA OF THE PLEURA

REPORT OF CASE

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This case is reported not only because of the rarity of the occurrence of the condition, but also because of the interesting conditions which prevailed throughout the course of the illness.

REPORT OF CASE

History.—A white man, aged 31, first reported at sick call, Oct. 29, 1918, and was sent to a field hospital, where a diagnosis of ileocolitis was made. From there he was immediately transferred to a base hospital. There he gave a history of having had diarrhea for two weeks previously. He was suffering from headache, and incontinence of feces, but he had no fever; mentally he was stupid and somnolent. November 9, on the discovery that the right side of the chest was partially flat, 500 c.c. of serosanguineous fluid were removed. Apparently no pus cells nor organisms were found in the fluid. As the mental condition grew worse, and definite auditory hallucinations were present, a diagnosis of a hebephrenic type of dementia praecox was made.

December 22, the patient was sent to the psychiatric department at Bazoilles, where examination disclosed that his memory was poor, that he had persecutory delusions, and that he was confused and disoriented. After physical examination the diagnosis of fluid in the right chest, with possible empyema, was made. The mental condition was then

ascribed to the toxemia and exhaustion, and the patient was transferred to the medical service. There the chest was explored with a needle, but no fluid was obtained; something solid, however, was encountered. Over the flat area, tactile and vocal fremitus were lost, and breath sounds were distant. Above the flat area there were coarse moist râles, and the breathing was only faintly heard. The mediastinal dulness was noted as widened, and the heart impulse as outside the nipple line. A needle had been inserted at numerous times and by different surgeons but no fluid had been found, and on each occasion the impression of solidity was obtained. At the time of this examination there was some bulging of the right chest, and the patient began to complain of pain in the right upper abdominal quadrant. The leukocyte count was continually around 60,000, with 94 per cent. polymorphonuclears; the temperature would often rise to 102 F. The roentgenologist consistently reported fluid in the right chest.

February 1, the patient with others was taken over by our hospital. He was unable to sit up, although he would continually ask to be allowed out of bed. His body was emaciated, and the face had a hectic appearance. He showed marked mental deterioration, with the talk and manner of speech of a boy. He was emotional, crying easily and usually begging to be sent home. He was well acquainted with his present surroundings and with all in attendance. His movements were coordinate, and there was no spasticity. He usually lay on his back, but he could easily move about in bed. The chest examination disclosed that the cardiac dulness was not increased, and the apex beat was but slightly outside the normal position. The left chest was negative. The right chest was markedly larger than the left, and at one place, anterior and just above the costal margin, bulged somewhat into a solid rounded bump. Everywhere there was absolute flatness. Percussion below the fifth rib anteriorly was like striking a board. Over the lower and midlobes, breath sounds were but faintly heard and at a great distance. They were much louder at the apex and along the spine. However, everywhere they were of transmitted quality, distantly tubular. No râles were heard. Fremitus was abolished. With the history of 500 c.c. of serosanguineous fluid having been obtained early, of the numerous dry taps with the needle meeting strong resistance later, of the wooden percussion note, of the uneven breath transmission along the spine, of the right-sided shadow on the roentgenogram, and especially of the absence of cardiac displacement, the diagnosis of a new growth was made. Opposed to this diagnosis were the disconcerting features of a very high leukocytosis with the increase in polymorphonuclears, and a consistently moderate rise in temperature. It was thought that perhaps there might be a degenerated area in the tumor mass with abscess formation. However, there were no rigors nor high elevations of temperature. The expectoration was not profuse, nor at any time blood stained, nor of bad odor. Even the urine was albumin free.

The patient was observed from almost every angle as he progressively grew weaker. One had to bear in mind that perhaps there was present a condition which could be relieved by operation. The roentgenologist could not definitely diagnose the lesion with plates, and the horizontal screen was not in good working order. Tubercle bacilli were never found. The Wassermann reaction was negative. The blood picture showed no atypical cells. The sputum typed Group IV pneumococci. The pain in the right upper abdominal quadrant came oftener and grew more intense. There were no paralyses, nor stupor, nor loss of consciousness up until the patient's death, which occurred March 14, 1919, five months after the first symptoms were noticed. Because of the patient's age and the absence of recognized signs of metastases or lung infiltration, the tumor growth was thought to be probably of connective tissue origin. Death came without any new signs appearing except in the last few days, when there was an impairment of the good lung.

Necropsy Findings.—The anatomic diagnosis was malignant tumor of the right pleura and lungs with extension into the liver, chest wall and left pleura, and metastasis into the brain and peritoneum.

The right chest, just external to the nipple line at the seventh rib, showed a distinct bulging which was slightly nodular. On removal of the skin and muscles, several grayish white nodules were found adherent to the chest wall. The right pleural cavity was obliterated by a nodular, grayish white, friable tissue from 1 to 3 cm. in thickness, being thinnest at the apex and thickest near the mediastinum. It was firmly adherent to the lung and chest wall. The diaphragm was replaced by the same tissue, which extended deeply into the liver. The left pleural cavity contained 200 c.c. of clear fluid. A few adhesions were present. Posteriorly the parietal and visceral pleurae were covered by numerous firm white tubercles, varying in size from that of a pinhead to that of a large bean. A few appeared anteriorly.

The right lung was firm, and on section appeared dry with a marked increase in interstitial tissue. In the upper lobe the bronchi were surrounded by a white fibrous tissue. Occasionally a distinct nodule of this fibrous tissue was seen. All lobes were somewhat atelectatic. The left lung was soft and air-containing, but somewhat nodular. On section the nodules were found to be white with definite strands of fiber visible. The neck organs and cervical lymph glands were not remarkable.

The peritoneum was smooth and glistening, and the cavity contained no fluid. The upper and external surface of the liver was adherent to the peritoneum with a comparatively firm, friable adhesion in which were many grayish white nodules of varying sizes. A few isolated grayish nodules, the size of a pea, were scattered over the visceral and parietal layers. The liver was pushed downward about 4 cm. Its surface, especially the upper anterior and external aspects, was covered by the same nodules. On section, the advance of the tumor was seen to extend from 2 to 5 cm. into the liver substance. The advancing margin was composed of small, round tubercles which seemed to coalesce with age.

In the intestine, about 1 meter below the beginning of the ileum, there was a gray nodule which involved the entire thickness of the intestinal wall. It was surrounded by a zone of hyperemia. On the cecum, near the appendix, there were two nodules, 1 cm. in diameter, but they seemed to involve only the peritoneum.

The spleen was moderately enlarged and the capsule was wrinkled and thickened. On section, a smooth surface the color of grape juice was presented. The right suprarenal was somewhat enlarged, and near its center there was a nodule the size of a pea and similar to those just described. The left suprarenal was not remarkable. The kidneys were small and pale. The capsule stripped easily, and the cortex and medulla were well defined. The stomach, pancreas, bladder and genitalia showed nothing of note.

The meninges were clear. The brain on section showed a cavity, 3 by 3 by 6 cm., above the left lateral ventricle. The wall of this cavity was composed of a layer of brownish red tissue, 1 cm. in thickness, and distinctly nodular. The cavity was filled with an amber fluid containing numerous cholesterin crystals and a small amount of granular débris. Several smaller cysts similar to this were seen in the white matter throughout the brain sinuses.

Microscopic Diagnosis.—Thickened Pleura: The bulk of the tumor consisted of fibroblasts and connective tissue cells. These were arranged in many bands which communicated freely with one another. In certain areas these cells were nucleated and showed active growth. Usually, however, no nuclei were demonstrated. Between these strands of cells were many nests of cells. Near the center of the thickened pleura these nests were small, and the cells markedly distorted. Near the periphery the cells were more plentiful and the connective tissue much less conspicuous. There was a marked variation in the size and in the staining characteristics of these cells. Some were large and polygonal and stained densely; others were large with pale staining protoplasm, while still others were small and pyknotic. The cells were formed in groups, and in some places had a slight glandular arrangement. Karyokinesis was seen in many cells.

Liver Metastasis: The liver cells were cloudy, and many contained fat globules. The fat was especially noticed in

the cells surrounding the central vein. The line between the tumor cells and the liver cells was marked by a thin zone of scattered round cells with an occasional polymorphonuclear. Usually this line was cleancut and distinct. Occasionally tumor cells extended beyond it. The tumor cells were identical in appearance and arrangement to those in the tumor of the pleura. There was, however, very little connective tissue in the liver tumors.

Metastatic Nodules in Left Pleura: The cells were identical to those described above. Those in advance filled the alveoli of the lung, and in many cases were limited to a given alveolus. Deeper in the tumor, however, the alveolar wall was represented only by a thin line of connective tissue.

Right Suprarenal: The tumor was identical in every way to those just described. Its extending margins were clear and distinct.

Metastasis into Brain: Here the cells were arranged in a more orderly manner. Many definite papillae were present. The margin invading the brain substance was somewhat more irregular, and frequently the cells extended deeply into the brain. However, the general characteristics of the tumor cells were the same as those of the pleura.

The microscopic diagnosis was endothelioma of the right pleura with metastasis into the liver, left pleura, suprarenal, peritoneum and brain.

COMMENT

Most likely the first symptoms in this case were produced by the metastases in the brain, as no history of the chest condition was obtained until later. The diarrhea, noted at first as incontinence of feces, the stupor, and the psychosis were the outstanding signs and the ones that caused the patient to come under medical observation. The growth proper was not detected early because it produced no painful symptoms and invaded no tissue that gave any local reaction. The pleural effusion was the first sign noticed in the chest, and this was some time after the mental symptoms had appeared. The metastases were doubtless of a blood vessel type, and those in the brain were probably the first given off. Neither the motor nor the sensory areas were attacked, but apparently the parts associated with thought activity were greatly disturbed. The nodules in the intestine may have produced the diarrhea. The liver was invaded directly through the diaphragm. The latter lost its identity on the right side and was replaced by the advancing growth. The necropsy findings in no way explained the consistently and extremely high increase in white blood cells. The metastatic areas in the brain were sterile and showed no inflammatory reaction. The fever was no doubt due to toxic resorption. The growth began in the right pleura at the mediastinum and extended along the diaphragmatic and later the costal portions, compressing the lung upward in its course. Death was the result of asthenia.

The Geographic Distribution of Diseases.—L. R. Grote declares that not enough statistics and other data have been accumulated as yet for what he calls nosogeography. This is a science of the future, to be based on geographic, climatic influences, racial differences, social and economic conditions, the biology of the causative agents, and the effect of human efforts at prophylaxis. He reiterates that there is no part of the world absolutely free from any of the constitutional diseases, or where the infectious diseases cannot get a foothold when the causal agent is imported. In discussing these five elements of nosogeography in the *Geographische Zeitschrift* **25,** No. 7, 1919, he cites a number of puzzling facts, such, as the high tuberculosis death rate and the low cancer death rate—only 4 per ten thousand—in the Münster region, while the reverse prevails in the East Sea provinces, the cancer rate being 14 while the tuberculosis rate is among the lowest.

THE PRODUCTION OF AN ACUTE RESPIRATORY DISEASE IN MONKEYS BY INOCULATION WITH BACILLUS INFLUENZAE

A PRELIMINARY REPORT *

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Many attempts have been made to produce influenza in animals, or to transmit it experimentally from man to man by inoculation of the secretions, both filtered and unfiltered, from the respiratory tract in cases of influenza, by direct exposure of the subject to patients with influenza, and by inoculation with cultures of *Bacillus influenzae* isolated from patients with the disease. In large part, the results obtained have been entirely negative. In the few instances in which successful transmission of the disease has been reported, the methods employed and results obtained by different observers have been to a considerable extent inconsistent.

During the course of an investigation of experimental pneumonia in monkeys produced by the intratracheal injection of pneumococcus and *Streptococcus hemolyticus,* a further series of experiments with *B. influenzae* was undertaken in the hope of throwing some light on the relation which this organism bears to epidemic influenza and to the pneumonia which so frequently complicates it. The results obtained have been of such interest that it seems desirable to present a brief preliminary report at this time. The work will subsequently be reported in detail with full protocols.

Two species of monkeys were used: *Macacus syrichtus* from the Philippine Islands, and *Cebus capucinus* from Central America. All were fresh stock and had not previously been kept in captivity in this country. No preliminary procedures to lower resistance or to injure the respiratory tract before inoculation were resorted to. The strain of *B. influenzae*[1] employed was originally isolated from a case of influenzal pneumonia in a child. When received it had been in subculture on blood agar for a period of six weeks, and was found to possess no virulence for white mice. Since it was well known that the pathogenicity and virulence of *B. influenzae* are extraordinarily labile and very rapidly lost on subculture on artificial mediums, it was deemed necessary to raise the virulence of the strain to a considerable extent if successful results were to be obtained. This was accomplished, in brief, by successive animal passages, first through a series of eleven white mice, and then through a series of thirteen monkeys. These animals were inoculated intraperitoneally, the attempt being made always to give a sufficiently large dose to kill the animal within from twenty-four to forty-eight hours. Presumably because of individual variation in resistance, the desired result was not always obtained. In order, therefore, to avoid delay and possible loss of virulence because of this circumstance, fluid was withdrawn from the peritoneal cavity of the inoculated animals from eight to ten hours after injection, when the bacteria were still

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1. We are indebted to Dr. T. M. Rivers of the Johns Hopkins Medical School, Baltimore, for the strain of B. influenzae used.

actively growing in the peritoneum, and cultures were prepared to be used for inoculation of a fresh animal on the next day in case the previously inoculated animal failed to succumb. By this means the virulence of the strain of *B. influenzae* employed was sufficiently raised so that 0.01 c.c. of a sixteen-hour blood broth culture injected intraperitoneally killed a white mouse within forty-eight hours.

It was then considered probable that the organism had attained sufficient virulence to warrant testing the effect of inoculating monkeys in the respiratory tract. Accordingly, a series of twenty-two monkeys were so inoculated. The material used for inoculation may be divided into three groups: (1) first or second subculture on blood agar or in blood broth of *B. influenzae* recovered from the peritoneal exudate or heart's blood of monkeys dying of *B. influenzae* peritonitis and septicemia; (2) first or second subculture of *B. influenzae* recovered from the respiratory tract of monkeys killed during the acute stage of the pneumonia produced by intratracheal injection of the organism, and (3) the peritoneal exudate of monkeys dying of *B. influenzae* peritonitis, the exudate being controlled as to its purity by microscopic examination of stained films and by culture on blood agar plates.

Two modes of inoculation were employed, and for convenience the experiments may be divided into two groups according to the method used. In one group, in order to determine whether *B. influenzae* would initiate an infection of the upper respiratory tract, and if so, what the characteristics of the disease produced might be, the material to be inoculated was introduced into the nose and mouth either by application with a sterile cotton swab or by instillation with a pipet. In the second group, the material was introduced into the lower respiratory tract by direct intratracheal injection with a Luer syringe, the needle of which was inserted into the lumen of the trachea between the tracheal cartilages just below the larynx, the special purpose of this series of experiments being to determine if possible the pathologic characteristics of *B. influenzae* pneumonia.

In the majority of the experiments, the monkeys were held under preliminary observation for a period of from three to seven days before inoculation, during which time morning and evening temperatures (rectal) were taken, and daily total and differential leukocyte counts were made. The methods of study after inoculation consisted in the observation and recording of clinical symptoms, in the taking of morning and evening temperatures (rectal), daily total and differential counts of the leukocytes, and blood cultures at irregular intervals. Since the disease produced did not prove fatal, most of the animals were killed and necropsies performed at varying intervals during the acute stage of the disease or immediately after recovery.

THE EFFECT OF INOCULATING MONKEYS IN THE NOSE AND MOUTH WITH BACILLUS INFLUENZAE

Twelve monkeys received inoculations of *B. influenzae* in the nose or in the nose and mouth, with the successful production in every instance of an acute respiratory disease which appeared to be identical with influenza in man. The amount of culture or peritoneal exudate inoculated varied from what could be introduced by the single application of a cotton swab previously dipped in the culture up to 1 c.c. in each nostril and in the mouth.

Clinical Course and Symptoms.—The onset occurred from three to six hours after inoculation, the first symptom being a variable degree of prostration, often extreme, the animals in many cases lying prostrate on the floor of the cage, eyes closed and very stuporous. This was accompanied by an abrupt rise in temperature varying between 103 and 106 F. in some cases, with only moderate or no febrile reaction in others. Symptoms of upper respiratory tract infection soon followed, frequent sneezing, blinking of the eyes and rubbing of the nose being the prominent initial manifestations. The subsequent course of the disease showed some variation, but in general it was that of a self limited respiratory disease of from three to five days' duration. In most cases, by the end of from twenty-four to forty-eight hours, the infection had spread to the lower respiratory tract, as shown by the development of a racking cough. A variable amount, usually scanty, of mucoid or mucopurulent nasal secretion appeared in which *B. influenzae* might or might not be found. The temperature reaction varied greatly and showed no constant type of curve, being analogous in this respect to the variable types of febrile reaction seen in influenza in man. The leukocyte counts showed during the active stage of the disease either a definite degree of leukopenia or no significant variation from the normal, leukocytosis occurring in only three cases on the third or fourth day of the disease coincident with the development of a complicating purulent sinusitis.

Complications.—Five monkeys developed an acute purulent sinusitis of the antrum of Highmore from which *B. influenzae* in pure culture or mixed with some other organism was recovered at necropsy. Two animals developed pneumonia on the third and fourth days, respectively. The onset of pneumonia was insidious, and the presence of the disease was suspected only because of a rise in temperature and moderate acceleration of the respiratory rate. Both animals were killed during the early stage of the pneumonia, *B. influenzae* being recovered from the lungs in pure culture in both cases.

Pathology.—Nine animals were killed, and necropsies with bacteriologic examination were performed. Those killed during the active stage of the disease all showed rhinitis, with purulent sinusitis of the antrums in five cases. Cultures from the antrums showed *B. influenzae* in abundance in three cases, moderate numbers in a fourth, and none were recovered in the fifth. In two cases, *B influenzae* was present in pure culture; in two, other bacteria also were found. Six cases showed a tracheitis or tracheobronchitis. *B. influenzae* was recovered from the trachea or bronchi in all of these: in two cases, in pure culture; in four, mixed with other bacteria (*Staphylococcus albus,* nonhemolytic streptococcus, or a gram-negative micrococcus). Two animals showed a fairly extensive bronchopneumonia involving the right upper and lower lobes, and the left upper lobe in one; the left lower, middle and upper and right upper lobes in the other. This pneumonia, in brief, was characterized by extensive hemorrhage, peribronchial areas of consolidation with an exudate of leukocytes, mononuclear cells and desquamated alveolar epithelium and thickening and infiltration of the alveolar walls, absence of pleurisy, and considerable patchy emphysema of the peripheral lobules. *B. influenzae* was recovered in pure culture from the lungs in both cases.

THE EFFECT OF INTRATRACHEAL INJECTION OF BACILLUS INFLUENZAE IN MONKEYS

Ten monkeys received intratracheal injections of *B. influenzae,* in amounts varying from 1 to 5 c.c. of culture or peritoneal exudate, with the successful production of pneumonia in seven instances. Two monkeys showed only a tracheobronchitis; one showed no evidence of infection. The symptoms of prostration and cough, temperature and leukocyte reactions were the same as in the preceding group. In addition, the respiration was accelerated. In two cases, the infection spread to the upper respiratory tract with the development of coryza and frequent sneezing. In one case, a general infection with *B. influenzae* septicemia and pericarditis ensued. In no case did the disease prove fatal. It seems probable, however, that death would have occurred in the monkey that developed septicemia and pericarditis had it not been killed.

Pathology.—Of the seven monkeys developing pneumonia, three were killed during the active stage of the disease with the recovery of *B. influenzae* in pure culture in all; four were killed immediately after recovery, cultures made at necropsy being sterile. In the two cases in which only a tracheobronchitis developed, cultures from the trachea at necropsy yielded *B. influenzae* in pure culture in one, and no growth in the other.

Two types of pneumonia were encountered: a widespread, patchy pneumonia with extensive hemorrhage and edema, little cellular exudate or infiltration, and patchy emphysema; or a bronchopneumonia with extensive bronchitis and bronchiolitis, thickening and infiltration of the alveolar walls with swelling, proliferation and desquamation of the epithelial lining, and areas of peribronchial consolidation in which the alveoli were filled with mononuclear cells, polymorphonuclear leukocytes, red blood corpuscles and desquamated epithelial cells in varying proportions. Fibrin was very scanty or entirely wanting, and the pleural surface was rarely involved. One animal showed bronchiectasis. These two types of pneumonia appear to be essentially identical with the types of pneumonia in man that have been ascribed to infection with *B. influenzae,* when uncomplicated by secondary invaders.

SUMMARY

Twelve monkeys inoculated in the nose or in the nose and mouth with a strain of *B. influenzae* originally isolated from a case of influenzal pneumonia in man and subsequently raised in virulence by animal passage developed an acute, self limited respiratory disease of from three to five days' duration, characterized by sudden onset with profound prostration; the development of rhinitis and tracheobronchitis, with sneezing, cough, and the outpouring of a scanty mucoid or mucopurulent exudate; a variable febrile reaction, and either a leukopenia or no significant change in the leukocyte count. This disease was complicated in five instances by the development of a purulent sinusitis, in two by the development of a fairly extensive hemorrhagic pneumonia with areas of peribronchial consolidation. *B. influenzae* was recovered at necropsy from lesions of the disease either in pure culture or in association with organisms that are normal inhabitants of the upper respiratory tract of monkeys. The disease produced appears to be identical with influenza in man in its course, symptomatology, complications and pathology.

Of ten monkeys injected intratracheally with the same strain of *B. influenzae,* seven developed pneumonia, two developed tracheobronchitis without pneumonia, and one resisted infection. The general symptoms of the disease produced were the same as in the preceding group, that is, sudden onset, prostration, a veriable febrile reaction, and leukopenia or no significant change in the leukocyte count. The disease was accompanied by a severe cough and accelerated respirations; and in two cases, infection of the upper respiratory tract ensued. *B. influenzae* was recovered in pure culture from the lungs, bronchi or trachea in those animals killed during the active stage of the disease. The pneumonia produced presented the same pathologic picture as that which was found in the two animals developing influenzal pneumonia following inoculation of *B. influenzae* in the upper respiratory tract, and appears to be essentially identical with that ascribed to pure influenza bacillus infection of the lungs in man.

CONCLUSIONS

1. *Bacillus influenzae* can initiate in monkeys an acute infection of the upper respiratory tract which may be complicated by acute sinusitis, tracheobronchitis and bronchopneumonia.

2. This disease appears to be identical with influenza in man.

3. *B. influenzae* when injected intratracheally will produce in monkeys a tracheobronchitis and bronchopneumonia, the pathology of which appears to be essentially identical with that which has been ascribed to pure influenza bacillus infection of the lungs in man.

4. In view of these facts and the constant association of *B. influenzae* with early uncomplicated cases of influenza, it seems reasonable to infer that *B. influenzae* is the specific cause of influenza.

SIMPLIFIED TREATMENT OF THE ORDINARY VARICOSE ULCER

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Ulcer of the leg is by far the most common type of ulcer with which the medical practitioner has to deal, and its treatment is generally most unsatisfactory. The reasons for this lie in the fact that the patient will not consent to take the necessary time for the rest essential to successful treatment, until the ulcer becomes painful; or the physician contents himself with the application of some ointment and allows the patient to gain the impression that there is little else to be done. Many of these patients suffer for years from this extremely annoying condition, thinking that there is no help for it.

When these cases first come under observation, the surface of the ulcer is denuded, with a ragged, overhanging edge, while the base is filled with gray granulation tissue accompanied by a continuous discharge. There is usually more or less edema and a brawny condition of the surrounding skin, and if the ulcer lies over bone, there may be a secondary periostitis which stimulates the patient to seek relief. Bacterial absorption from the ulcer plays an important rôle in the causation of the local edema; usually this clears up following the healing of the ulcer, in spite of the fact that there may be more or less varicosity.

During the past few years, I have evolved a technic which seems to me very simple and applicable in most cases with the minimum loss of time to the patient.

The mode of procedure is as follows: The ulcer is first cauterized with fused silver nitrate, and the leg elevated for twenty-four hours, to clear the edema. Then a dressing, after the formula of Unna, is applied: gelatin, two parts; zinc oxid, one part; glycerin, three parts, and water, from four to six parts (depending on the consistency desired). These are mixed in a water bath and the paste is applied warm with a spatula to the entire leg from the ball of the foot to the knee, leaving the heel free. A roller bandage is immediately applied over this so that the paste penetrates the first layers of the bandage; if applied smoothly and evenly this makes an ideal supporting bandage and prevents a return of the edema when the patient is again ambulant. Forty-eight hours after cauterization, a small window is cut in the dressing over the ulcer. The slough is cleaned away with a sharp curet until the surface is clear, clean and easily bleeding; the edges will be found somewhat undermined.

With curved scissors the edges of the ulcer are trimmed away, removing a barrier to epithelization from the periphery of the wound. The tissue thus removed is placed on a piece of gauze moistened with physiologic sodium chlorid solution, and with a piece of dry, sterile gauze gentle pressure is made on the ulcer until all oozing has stopped. The edge is then coiled in the crater of the ulcer, and over this is placed a perforated piece of rubber to assist in drainage, and the whole is covered by a sterile dressing and a snug roller. Elevation of the limb should be continued for three days, when the wound should be dressed, after removing the rubber drain, with gauze impregnated with a 5 per cent. scarlet red ointment. The patient is now allowed to be up and about, but is cautioned to remain quiet for a few days longer or until epithelization of the wound is complete. The paste dressing is left on the leg for two weeks and is then reapplied if continued support is desired.

In sensitive patients, the area may be blocked with a 2 per cent. solution of procain.

GALLBLADDER DISEASE

SUMMARY OF FOUR HUNDRED AND TWENTY-FIVE CASES TREATED AT THE HARTFORD HOSPITAL FROM 1914 TO 1918

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This report is based on 425 admissions to the Hartford Hospital from 1914 to 1918 in which a gallbladder or gallduct disease was suspected or found during treatment. The hospital records have been studied in some detail, and a personal letter was sent to 350 patients who left the hospital, of whom 148 filled in and returned the questionnaire. I have tried to group some of the more important notations for analysis. These patients, both ward and private, for the greater part were admitted to, or transferred to, the surgical service for treatment. Each staff surgeon's work is represented, also a liberal sprinkling of private work done by nonmembers of the hospital staff.

I have arranged this report somewhat after the model of an individual history as taken by the house officer. As regards family history, there seems to be little of importance. Occasionally there was an interesting coincidence; for example, one patient, a physician's wife, wrote me that she, her husband and their son were each recently operated on for cholelithiasis.

For convenience the ages are divided into decades, from 10 to 20 to 71 to 80 (Table 1). Complications and associated pathologic conditions have not been noted here.

TABLE 1.—AGE GROUPS

Age	Cholelithiasis No.	Cholecystitis No.
From 10 to 20	1*	6
From 21 to 30	41	17
From 31 to 40	83	18
From 41 to 50	92	20
From 51 to 60	80	17
From 61 to 70	32	6
From 71 to 80	9	3
Total	338	87

* A girl of 18.

There were eighty-three males and 342 females who came under observation, a ratio of about 1:4.

TABLE 2.—NATIONALITY*

	No.	Per Cent.
Americans	229	53.8
Russians	49	11.5
Swedish	18	4.2
German and Austrian	21	4.9
Polish	20	4.7
Italian	26	6.1
Armenian	6	1.4
Greek	1	

* Fifty-five histories did not state the nationality, but no marked disproportion is evident.

TABLE 3.—OCCUPATION*

	No.
Housework	273
Labor	24
Shop	28
Sedentary	36
Nurses	5

* Fifty-nine histories did not state the occupation.

Under previous illnesses (Table 4) are noted the more important ones, not including the contagious diseases of childhood, one or more of which was recorded in nearly every case.

TABLE 4.—PREVIOUS ILLNESSES

	No.	Per Cent.
Marked constipation*	166	39
Recurrent attacks of tonsillitis	46	10.8
Typhoid fever	43	10.1
Scarlet fever	38	8.9
Pneumonia	31	7.8
Appendicitis	29	6.8
Rheumatism	25	5.8

* This not being mentioned in the other histories.

Of the 342 women, 151, or 44.1 per cent., had had children, and twenty-three, or 6.7 per cent., were unmarried.

Pain of some sort was almost a constant symptom, it being described in 84 per cent. of cases. Practically all patients had repeated attacks; many of them could ascribe an attack to some particular cause. Probably the most common cause in those having had children was labor. Not a few patients suffered an attack shortly after delivery.

Indiscretion in diet would precipitate an attack in many. A few patients could almost certainly expect

an attack following an alcoholic debauch, while constipation figured frequently.

The time of onset was not mentioned in most of the histories, but from those in which it was stated, about 50 per cent. were nocturnal.

The duration of gallbladder disease as determined by pain seemed to be of considerable interest when considered with the complications, the difficulty experienced at operations, and the advanced age of many of these patients when they eventually came to operation.

A few of the younger patients, and particularly those who had a cholecystitis, were admitted during the initial attack. The duration in the 283 cases in which this was stated is given in Table 5.

TABLE 5.—DURATION

Duration Years*	No.	Per Cent.
From ½ to 1	118	41.7
From 1 to 2	38	13.4
From 2 to 3	29	10.2
From 3 to 4	14	4.9
From 4 to 5	14	4.9
From 5 to 30	70	24.7

* In a few the duration was even longer than thirty years.

TABLE 6.—LOCATION OF MAXIMUM PAIN

Location	No.	Per Cent.
Right upper quadrant	179	50.5
Epigastrium	130	36.7
Right lower quadrant	27	7.6
General to abdomen	18	5
Radiation to back or shoulders	159	44.9
Colicky	148	41.8

The maximum pain as located in 354 cases is given in Table 6. The character was not definitely described in about half the cases. Other symptoms frequently mentioned were indigestion and vomiting, which were noted in 215, or 50.5 per cent. of cases. In 120, or 28.2 per cent., jaundice appeared, and loss of weight in fifty-three, or 12.4 per cent. The maximum point of tenderness as noted in 270 cases was located 177 times in the right upper quadrant; forty-eight times in the right lower quadrant, and forty-five times in the epigastrium. It was not localized in 155 examinations. On palpation, the gallbladder could be felt in forty-nine cases, the liver in six, and the pancreas in one.

A roentgen-ray examination of the stomach or gallbladder was made in seventy of the cases, with the reports given in Table 7.

TABLE 7.—ROENTGENOGRAPHIC REPORTS

Condition	Diagnosis	No. of Cases
Cholelithiasis	Adhesions about the pylorus	10
Cholelithiasis	Gastroptosis	8
Cholecystitis	No evidences of cholelithiasis	7
Cholelithiasis	Gastric or duodenal ulcer	8
Cholelithiasis	New growth	6
Cholelithiasis	Stomach and gallbladder appeared normal	17
Carcinoma of gallbladder with cholelithiasis	Gastric carcinoma	1
Cholelithiasis	Poor plates	5

Gallstones were demonstrated in two cases. In six cases gastric or duodenal ulcer was demonstrated in which cholelithiasis was also present.

Of the 425 patients under discussion, thirty-five, or 8.2 per cent., had previously been operated on for cholelithiasis, a drainage of the gallbladder having been done; fifteen of these had recurrent cholelithiasis; three had stones in the common duct; fourteen suffered from cholecystitis and adhesions, and three from biliary sinuses. In two other cases the gallbladder had previously been removed; these patients returned with symptoms of stones in the common duct.

In all, 331 cases came to operation. Ninety-four patients either refused operation or were advised not to be operated on for some sufficient reason. Cholecystostomy was performed in 171, or 51.6 per cent., of cases; cholecystectomy, in 139, or 42 per cent. Adhesions about the gallbladder were broken up in twelve cases. There was primary closure of the gallbladder after removal of stones in four cases. No pathologic condition about the gallbladder was found in three cases, and in two cases the small bowel was opened for the removal of gallstones causing intestinal obstruction.

ASSOCIATED PATHOLOGIC CONDITIONS

The appendix was found to be definitely diseased and was removed in thirty-nine cases; cancer of the gallbladder in four; ruptured gallbladder and general peritonitis in four; gastric ulcer in three; duodenal ulcer in four; a perforation of the gallbladder into the duodenum in two, and a perforation of the gallbladder into the stomach in one. There was one case of acute pancreatitis with fat necrosis and there were twelve cases of chronic pancreatitis.

One patient had a painless jaundice of six months' duration, with congestion of the liver and marked loss of weight. A large stone was removed from the common duct, following which she made a complete recovery and is now well, four and a half years following operation.

TABLE 8.—AGE OF PATIENTS WHO DIED

Age, Years	No. of Patients
Between 61 and 70	7
Between 51 and 60	10
Between 41 and 50	13
Between 31 and 40	3
Between 20 and 30	2

MORBIDITY, CONVALESCENCE AND MORTALITY

The average length of time spent in the hospital following cholecystostomy was twenty-three and a half days, as against twenty-two and a half days for cholecystectomy. Of 148 replies to the circular letter, sixty were from cholecystectomy patients, of whom three, or 5 per cent., had recurrent pain since operation. Seventy-four were from cholecystostomy patients, of whom nine, or 12.1 per cent., had recurrent attacks of pain. Four were from patients who had adhesions about the gallbladder broken up; two, or 50 per cent., of these had recurrent attacks of pain. In one of the four primary closures the patient had recurrent attacks of pain.

Nine patients who were discharged without operation replied. Convalescence was recorded as satisfactory in 271 cases and as stormy in twenty-nine, while thirty-one patients died. Of these there were eleven cholecystectomies, one carcinoma of the gallbladder, in which nothing more than exploration was done, and nineteen cholecystostomies. It is a fact, however, that the more desperate cases, including one carcinoma with stones and four ruptured gallbladders with general peritonitis, were among the cases with drainage.

The operative mortality, excluding the four cases of general peritonitis and the one case of carcinoma in which the patient lingered on and died before leaving the hospital, is 7.8 per cent. Deaver, in 1916, reported 1,031 cases with a mortality of 7.2 per cent. Twenty-five New York hospitals reported a series of cases with a mortality of 8.3 per cent. Mayo reports 4,000 cases with a mortality of 2.75 per cent.

TABLE 9.—DURATION OF GALLBLADDER DISEASE IN PATIENTS WHO DIED

Duration Years	No. of Patients
40	3
55	1
25	1
6	2
From a few days to 3 years	22*

* Three of these patients had previously been drained.

TABLE 10.—CAUSES OF DEATH

Myocarditis and general arterial changes	9
Pneumonia	6
Postoperative hemorrhage	5
Peritonitis	4
Pulmonary embolism	2
Fecal fistula	2
Typhoid fever	1
Acute nephritis	1
Abscess of liver	1

SUMMARY

It will be noted that when patients with gallbladder disease pass the 50-year mark, the operative mortality rises very abruptly, as out of the seventy-one patients admitted between 50 and 60 years, thirteen, or 18⅓ per cent., died. Of thirty-eight between 60 and 70, ten, or 26⅓ per cent., died; of twelve between 70 and 80, seven, or 68⅓ per cent., died, while out of 278 under 50, five, or 1.8 per cent., died.

When we consider the fact that the vast majority of cases develop before the age of 50 years, it would seem that we should try to prognosticate the eventualities and at least advise early operative procedures.

Of previous diseases, constipation is the most striking and of undoubted significance.

The addition to the twenty-nine previous appendectomies of the thirty-nine chronically inflamed appendixes removed at the time of gallbladder operation makes a total of sixty-eight, a rather large coincidence.

Of the acute infectious diseases in this series of cases, typhoid fever was not noted as frequently as recurrent attacks of tonsillitis, and only slightly more frequently than was scarlet fever, pneumonia or rheumatism.

When we add to the eighty-three males the twenty-three unmarried females and the 168 married women who did not give a history of childbearing, we get a total of 274 cases occurring independently of childbirth; and when it is recalled that the age of gallbladder disease in all patients coincides pretty closely with that of gestation, it does not seem that the latter is of unusual significance. (Undoubtedly there were some cases of pregnancy not noted.)

Indigestion without typical gallbladder pain was one of the most difficult symptoms to solve, and delayed the accurate diagnosis for a long time in many cases.

The comparative results of cholecystostomy and cholecystectomy in this series of cases show forty-four unsuccessful drainages against five unsuccessful removals.

110 High Street.

Therapeutics

A DEPARTMENT DEVOTED TO THE IMPROVEMENT OF THERAPY. A FORUM FOR THE DISCUSSION OF THE USE OF DRUGS AND OTHER REMEDIES IN THE TREATMENT OF DISEASE.

USE AND ABUSE OF CATHARTICS*

(*Continued from page 104*)

THE CATHARTIC SALTS

EFFECT ON URINE

That portion of the saline which is absorbed is chiefly eliminated by the urine, producing a diuretic action in inverse proportion to the cathartic effect. Generally, of course, owing to abstraction of water by way of the intestine, there is a diminution in the urinary secretion for about twelve hours. This is followed by increased secretion of urine for perhaps the next twenty-four hours. Very dilute, as well as very concentrated solution, and also very small doses, or antagonizing the cathartic action by remaining in bed after taking the dose or by the use of morphin, all bring out the diuretic action at the expense of the cathartic effect.

The curious observation has been made that magnesium sulphate increases acidity and ammonium in the urine, while sodium sulphate decreases urinary acidity. The reason for this lies in the different degree of absorbability of the various ions yielded by these salts in the intestine. The magnesium ion is more slowly absorbed than the sulphate ion. Hence, more magnesium remains in the bowel, while the acid ion, in passing through the system, abstracts alkali and acidifies the urine. With sodium sulphate, the reverse is the case. The sodium ion is more rapidly absorbed than the sulphate ion. Hence, an alkaline wave passes through the system and into the urine. This might cause sodium sulphate to be preferred to magnesium sulphate in conditions of acidosis or when it is desirable to keep urinary acidity low.

CHOICE AND ADMINISTRATION

The cathartic salines differ among themselves in potency and palatability, as well as in details of action, all of which determine their choice.

The mildest and most inoffensive of the group is *magnesium oxid,* which, in the form of "milk of magnesia" (magnesia magma), is the only cathartic saline admissible in the presence of vomiting. The preparation is so mild in action that it is chiefly suitable as a laxative for infants, with whom 1 or 2 teaspoonfuls added to milk or other feeding daily may suffice as a temporary expedient. To the adult, tablespoonful doses may have to be given repeatedly before laxative effect is obtained. Magnesium oxid is likewise rather feeble in cathartic action, and is more useful as a gastric antacid than as a laxative, especially in view of the reputed danger of formation of intestinal con-

* This is the fourteenth of a series of articles on the pharmacology, physiology and practical application of the common laxatives and cathartics. The first article appeared October 18.

cretions, when it is used for a time in the large doses required for cathartic effect. When magnesium oxid is prescribed by the teaspoonful, its lightness should be borne in mind. Even the "heavy magnesium oxid," the only form that should be employed internally, does not weigh much more than 1 gm. (15 grains) per teaspoonful. True, 2.5 gm. (40 grains) are equivalent in magnesium contents to 15 gm. (240 grains) of magnesium sulphate; but the oxid is much feebler in action, as it lacks solubility and, of course, the sulphate ion. To children, magnesium oxid might be given in the following dosage:

For 6 months old, from 0.30 to 0.60 gm. (5 to 10 grains)
For 18 months old, from 0.60 to 1.30 gm. (10 to 20 grains)
For 3 years old, from 1.30 to 2.00 gm. (20 to 30 grains)
For 5 years old, from 2.00 to 3.00 gm. (30 to 45 grains)

The subjoined prescription yields a palatable administration form for this drug:

℞ Magnesium oxid .....15 gm.
Fennel oil-sugar .....30 gm.
M. Label: One half of level teaspoonful two or three times daily.

Sodium phosphate is undoubtedly, next to magnesia, the least offensive of the cathartic salines. The taste is sufficiently like that of cooking salt to permit its administration in salt-free broth without the knowledge of the patient. It can thus be readily administered to a child. For bottle-fed infants, a dose of from 0.12 to 0.25 gm. (2 to 4 grains) may be added to each bottleful of milk. Dosage for children might range as follows:

For 6 months, from 0.30 to 0.60 gm (0.5 to 10 grains)
For 18 months, from 0.60 to 0.90 gm. (0.10 to 15 grains)
For 3 years, from 0.90 to 1.30 gm. (0.15 to 20 grains)
For 5 years, from 1.30 to 2.00 gm. (0.20 to 30 grains)

For a child 3 years old this salt may be prescribed in the form of the following solution of actually delicious taste:

	Gm. or C.c.	
℞ Sodium phosphate	12.0	ʒiii
Syrup of raspberry.....	20.0	ʒv
Orange flower water to make.....	60.0	ʒii

M. Label: Teaspoonful with water every two hours until evacuation is obtained.

As this is a fairly saturated solution, increase in dosage would be obtained by having the patient take a larger spoonful. For an adult, the dose of this solution would be a tablespoonful. However, adults take it readily in doses of from 2 to 8 gm. (½ to 2 drams) in a teacupful of water, as hot as can be borne. Such a dose might be administered once, twice or thrice daily, half an hour before meals; or else the effervescent sodium phosphate may be taken by the dessertspoonful in half a tumblerful of cold water or lemonade.

For the bitter cathartic salines, cold effervescing solution is the best administration form. The effervescence diminishes their taste: chiefly, perhaps, in a physical manner. Innumerable gas bubbles are formed the instant the cold fluid charged with carbon dioxid comes in contact with the warm surface of the mouth. The tasteless gas, taking the place, to a large extent, of the salty liquid, protects much of the gustatory surface against excitation. Furthermore, carbon dioxid as well as coldness have a depressing effect on the excitability of the gustatory nerve endings. Imparting effervescence to the dose is also of advantage for its effect on the stomach, chiefly because it expedites the passage of ingested material out of the stomach.[2] The sedative effect of the carbon dioxid on the gastric mucosa also lessens the nauseating tendency of these salts. These considerations enable one to understand why effervescent preparations are so prominent among the administration forms for soluble salines. It seems self-evident, however, that the administration of carbonated drinks should be avoided in patients with flatulent distention of the abdomen and in those suffering from dyspnea. Likewise is administration in effervescing form contraindicated in patients with cardiac enfeeblement. It is particularly obnoxious in dropsical patients with ascites.

All four available means of imparting effervescence to pharmaceutical products are made use of in the administration of these bodies.

In the preparation of the *Solution of Magnesium Citrate,* the most pleasant administration form for soluble cathartic saline, there is added to the sweetened and flavored fluid containing magnesium citrate and an excess of citric acid, just before inserting the stopper, a sufficient quantity of crystallized potassium bicarbonate to neutralize the acid. The stopper, having been securely fastened, retains the liberated carbon dioxid under pressure, so that on removal of the stopper, copious effervescence ensues. The dose of this solution for a vigorous adult is a bottleful (360 c.c., or 12 ounces). For persons presumably easily acted on, one half of the contents of the bottle may be given, and the balance kept in a cool place and well stoppered, to be administered in two or three hours if the first dose has not produced the desired result. Larger children will take a wineglassful of this solution with relish; and this dose may be repeated every two hours until a satisfactory evacuation has been obtained. Small children or infants should not be given this or any other effervescent medicament, as the unaccustomed appearance of the "spots" in the fluid frightens and repels them.

"Seidlitz Powders" (*Compound Effervescing Powder*) represent an ingenious method of obtaining an effervescing preparation of excellent keeping qualities. The effervescing ingredients (sodium bicarbonate and tartaric acid) are simply kept separate by being wrapped in powder papers of distinctive color—white for the acid, blue for the alkaline powder—to the latter of which are added 8 gm. (2 drams) of sodium and potassium tartrate. Just before taking, they are mixed in half a tumblerful of water. By having the water ice cold, and adding lemon juice and sugar to it, the dose may be made fairly palatable. One pair of powders is a rather mild aperient. Two pairs may be taken at one time, if required; or the dose may be repeated every three or four hours until the desired effect is obtained. A patient who is nauseated will probably not retain the whole dose given at once; but, when each of the powders is divided into fourths and this given in half a wineglassful of water every fifteen

2. This is the reason, for example, for the popularity of "soda water" during hot weather for water quenches thirst only while it is in the mouth and after it has left the stomach.

minutes, one may succeed in "settling" the stomach and producing an evacuation of the bowel at the same time.

Effervescent purgative salts are nothing more or less than a mixture of sodium bicarbonate and tartaric acid with the purgative saline—preferably sodium phosphate. All that is required for fair keeping qualities is that the ingredients be dry and be kept dry. Granulation is nonessential.

Finally, the saline may be added to carbonated water from a siphon bottle. In this manner, *magnesium sulphate*, the cheapest, most powerful, and most widely used of the salines, may readily be administered in its best disguise, namely, in form of ice-cold effervescing lemonade made without sugar, for the bitter-sweet taste is even more obnoxious than the bitter. Thus, a tablespoonful of Epsom salt may be mixed in a tumbler with a tablespoonful of lemon juice, a little cold water added for solution of the salt, and then the glass be half-filled with ice-cold carbonated water. Sucking a little lemon before, and drinking a large tumblerful of cold water immediately afterward are still further helpful in overcoming the disagreeableness of a dose of bitter salt.

In view of this abundance of satisfactory administration forms for salines, what justification is there for prescribing proprietary fancy-named products, whose only merit lies in clever advertising? An example of the result of the thoughtless recommendation of nostrums by physicians is "Sal Hepatica."[3]

MINERAL WATERS

Mineral waters are closely akin to nostrums in the manner in which many of them are exploited. For example, "Pluto Concentrated Spring Water," for which claims are made which in mendacity almost rival those of "patent medicines" in their palmiest days, owes its activity to Glauber's salt, 50 per cent.; Epsom salt, 31 per cent.; cooking salt, 2.5 per cent., with calcium sulphate nearly 3 per cent., and a trace of magnesium carbonate.[4] Does any rational-minded physician believe that he will get better or different results from this combination than he would from an analogous amount of either sodium sulphate or magnesium sulphate? Then why make the patient pay so much more for his "dose of salts"? Whenever physicians are as lavishly supplied with samples as they are with "Sal Hepatica" and "Pluto Water," let us remember that, aside from many other objections to them, somebody will have to pay a great deal more for the stuff than it is worth and resolve that it will not be our patients.

Experience, forced on us by the war, has shown that we can get along just as well—and, in point of fact, a great deal better—without such world-famed mineral waters even as "Hunyadi" or "Carlsbad."

While taking a mineral water at the springs adds the benefit of climatotherapy to that of pharmacotherapy, it is surely indisputable that whatever virtue is inherent in a mineral water taken at home is innate in its constituents. An artificial combination of these cannot fail to be just as good. Indeed, it is much better; for the physician can then control the constituents in such a way as to make them more suitable to the individual for whom they are intended. For example: Carlsbad salt is a combination of approximately the following composition: sodium chlorid, 1 part; sodium bicarbonate, 2 parts; sodium sulphate, 4 parts. The combination of alkali with cathartic saline must be admitted to have peculiar virtues. For one thing, it is better borne by the stomach of most dyspeptics than is the simple saline. Furthermore, the alkali has certain therapeutic indications, the consideration of the details of which would lead us beyond the scope of this article, which at times, might well be met in a constipated individual by simultaneous administration of a purgative. The advantage of the possibility of varying the proportions in the salt combination to meet the special indication of these different cases is sufficiently obvious to require further discussion. More than this can, however, be accomplished. There is no reason to suppose that it is impossible to improve on "nature," which, in this case, is nothing but the fortuitous presence of certain salts in the strata of earth through which the water happened to pass. In case of the Carlsbad salt combination, for instance, a great improvement in taste can be secured by substituting sodium phosphate for the sodium sulphate, and sodium citrate for the sodium chlorid, as in this prescription:

		Gm.	
℞	Sodium citrate	15|0	℥ss
	Sodium bicarbonate	30|0	ʒi
	Sodium phosphate	60|0	ʒii

M. Label: Teaspoonful in a cupful of hot water half an hour before meals.

This salt formula has secured as good results as have been obtained in saitable cases from Carlsbad salt, natural or artificial. A most important thing to be remembered in prescribing the salts of mineral waters is that the chief ingredient of mineral water is the water.

(To be continued)

3. Sal Hepatica, J. A. M. A. **62**: 472 (Feb. 7) 1914.
4. Pluto Concentrated Spring Water, J. A. M. A. **60**: 1013 (March 29) 1913.

Campaign Against Child Labor.—How hundreds of communities throughout the country have organized against child labor and illiteracy is told in a bulletin "Every Child in School" just issued by the Children's Bureau of the U. S. Department of Labor. This bulletin describes the methods and results of the "Back-to-School" and "Stay-in-School" campaigns carried on last year by forty-four states and the District of Columbia under the auspices of the Children's Bureau and the Council of National Defense. A larger proportion of these states have continued their efforts to stamp out child labor. As a result school time has been prolonged in many communities for boys and girls who might otherwise have had their education cut short. The "Back-in-School" and "Stay-in-School" campaigns have shown that in many places school attendance and child labor laws are not enforced. Many children of school age are in factories because there was not a sufficient number of attendance officers and factory inspectors to keep them in school and out of industry. In a single district an inspector reported 1,700 children as not having had a day of schooling. In many rural districts the children attend school only about half the time, and the hours for rural schools are very short. It is conditions such as these, the bulletin points out, that make the United States eighth instead of first on the list of civilized countries with regard to the proportion of literacy among its citizens.

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SATURDAY, JANUARY 17, 1920

RECENTLY DISCOVERED ASPECTS OF THE CAPILLARY BLOOD VESSELS

Recent investigations are conspiring to invest the blood capillaries with unexpected powers and correspondingly increased importance. Most of us have been taught to regard them as plastic vessels that permit the passage of waste or nutriment, as the case may be, through them by diffusion or other physicochemical processes. The capillaries, being devoid of a musculature such as is responsible for the changes in the caliber of the arteries, were assumed to be incapable of independent alteration of size, although they evidently respond passively to the greatly unlike volumes of blood driven into them at different times by the varying condition of the other parts of the circulatory system. Thus the capillary is well filled or empty, dilated or collapsed, according to the different masses of blood that reach it.

What has long been suspected regarding the motility of the capillaries in a few locations in the body has latterly become likely for many or all of them. These structures are known to have a formerly unsuspected nerve supply, which might be regarded as at least one prerequisite for independent contractile power. The existence of motility in nonmuscular cells, such as leukocytes, is familiar; hence, as Bayliss[1] has recently remarked, the absence of a muscular coat in the case of the capillaries does not warrant a denial of the possibility of active changes in caliber in the latter.

Professor Krogh[2] of Copenhagen has summarized considerable evidence which contravenes the prevailing conception that the blood is continuously flowing through the capillaries at rates that are determined solely by the state of contraction or dilatation of the corresponding arterioles. Under the old hypothesis, the dilatation of an arteriole will cause a rise of pressure in the corresponding capillaries, which will become passively expanded, to contract again by their own elasticity when the pressure is reduced. Today we seem, rather, forced to admit that these smallest vessels contain contractile elements of some sort within themselves and that they function especially in the direction of active dilatation. Thus the significance of a "capillary tone" can be understood.

The assumption of independent motility of the capillaries helps to explain the enormous variations in permeability that may be exhibited somewhere in the capillary region quite independent of any corresponding or coincident changes in general blood pressure, which have often been regarded as the impelling forces in the exchanges thus going on. In certain types of shock, for example, changes in the volume and concentration of the blood cannot be satisfactorily correlated under the older theories with the alterations of pressure in the circulation. The demonstration of independent activity on the part of the capillaries makes it easier to understand how blood may, as it were, disappear from the circulation. The capillary effect represented by the actively dilating vessels may actually overcome the usual effect of the contracting arterioles. Hereafter, therefore, it will be essential to know how and what substances act on the capillary mechanism, as well as their behavior toward the heart or the vessels equipped with contractile musculatures.

1. Bayliss, W. M.: The Capillary Circulation, Science Progress, October, 1919, p. 272.
2. Krogh, A.: The Supply of Oxygen to the Tissues and the Regulation of the Capillary Circulation, J. Physiol. **52**: 457 (May 20) 1919.

CARCINOMA OF THE APPENDIX

An English surgeon, Adams,[1] has recently commented on the fact that carcinoma of the appendix seems to be much less common in Great Britain than it is in the United States. He bases this statement on the observation that only four cases have been recorded among the 7,000 appendectomies that have been performed at St. Thomas' Hospital in London in the past seventeen years. This would give carcinoma of the appendix an incidence of only 0.05 per cent. in Great Britain, as contrasted with American figures which vary between 0.13 and 0.49 per cent.

Adams calls attention again to certain peculiarities of carcinoma of the appendix that distinguish it from most other forms of carcinoma. The explanation for the discrepancy between his figures and the American figures is quite clear, for he states in his article that routine microscopic examinations of the appendixes removed at operation were not made. This brings out the most important fact concerning carcinoma of the appendix, namely, that it is practically always an accidental finding. Figures such as those which have been published from the Mayo Clinic showing that nearly 0.5 per cent. of the appendixes removed were carcinomatous are due entirely to the fact that careful routine examination of all specimens is carried out. The fact that carcinoma of the appendix is usually an accidental discovery is due to certain peculiarities of the disease, the most important of which are the extreme slowness of its development and its comparative benignity. As a matter of fact, carcinoma of the appendix has practically never been diagnosed except on the operating

1. Adams: Proc. Roy. Soc. Med. **12**: 37, 1919.

table or in the necropsy room. When symptoms are present, they are the symptoms associated with appendicitis.

The condition is interesting on account of the questions that it raises. Carcinoma of the appendix is perhaps the best illustration we have of the fact that the microscopic structure of a neoplasm is not always a safe indication of clinical malignancy. It emphasizes a point of view that is sometimes forgotten—the division of neoplasms into benign and malignant neoplasms is, after all, an arbitrary one. There are not a few instances of tumors that are structurally benign causing metastases and presenting other characteristics of malignant growths. There are instances of new growths with the microscopic structure usually associated with malignancy which fail to metastasize and even fail to invade neighboring structures. Carcinoma of the appendix also brings up another question, namely, whether vestigial structures are more likely to be the seat of neoplasm than organs that are still of value to the body. It is, of course, notorious that degenerative changes take place in the appendix with great frequency, particularly the so-called obliterative appendicitis, and it has been suggested that carcinomas of the appendix are associated with this obliterative appendicitis. Some pathologists, indeed, have doubted whether many of the so-called neoplasms of the appendix were true neoplasms. They have held that the changes which occurred were in the nature of an atypical epithelial growth, such as may occur with many inflammatory chronic conditions, rather than true malignant neoplasms. The subject is worthy of further and more careful investigation.

THE METABOLISM OF THE NERVOUS SYSTEM

Recent years have witnessed a marked change in the views held with respect to the metabolism of the nervous system. Formerly this tissue was not regarded as an active participant in those types of chemical change in the body for which the muscles have been preeminently noted. The products of such metabolism are excreted in the body in the respiratory gases and, in far smaller degree, in the urine. Augmented muscular activity is promptly followed by an increased output of carbon dioxid and water that is rarely so small as to escape detection. In all the experiments which have been conducted to discover analogous increments of waste products incident to the activity of the nervous system, only negative results have been recorded by the same method of investigation. When dietary factors and muscular performance have been essentially unchanged, the vigorous exercise of the higher nervous system, so far as this is possible by the conscious cerebration of intellectual effort, has never been observed to alter the metabolism of matter and energy of the body as a whole.

This is not strange, however, if the small bulk of the nervous system in comparison with the ever-functioning muscular tissues is taken into account. Small increments of output may fail of appreciation in the larger aggregate of waste from other sources. The conventional methods of study have left us in the lurch in the study of the possible metabolism of the small, yet highly valuable portion of the body represented by the brain and its nervous appendages. Here the study of the isolated tissue, particularly by micro-analytic methods, has thrown new light on the functioning of those structures which were scarcely believed to exhibit the same order of energy transformations and material changes that are the conspicuous accompaniments of activity in muscles and glands. The investigations of Tashiro, in particular, at the University of Chicago, have demonstrated that nerve fibers have a metabolism as active as that of any tissue in the body. Ganglions appear to have a somewhat higher rate than the nerve fibers. Such estimations as have been made of the oxygen consumption of the brain—an index of its chemical exchanges—place it at a figure decidedly greater than that of skeletal muscle.

Evidently, then, the nervous tissues are not devoid of a vigorous "internal respiration." For the activity of the muscles, carbohydrates are now looked on as the preferred source of energy. Recent studies by Hirschberg and Winterstein[1] at Rostock have shown that the nervous system likewise can utilize sugars if one may judge from their disappearance from solutions brought into intimate contact with surviving nerves. There may also be some metabolism of nitrogenous components detectable even in the small portions of tissue that have been examined in this way by these observers.[2]

Even more unexpected, however, is the evidence presented for the metabolism of the lipoid components of nerves in the presence of oxygen.[3] This disintegrative change can be retarded by the presence of sugars, which seem to exert a "sparing" action on the lipoids. The products of the oxidative breakdown of the nerve lipoids is not yet known. This evidence of the possible involvement of the lipoids in nerve metabolism is in harmony with the contention of Mathews,[4] who regards the medullary sheath as probably nutritive. He has pointed out that the brain contains no glycogen or neutral fat. Since the nerve cells must have a good supply of raw material for such active metabolism as the experiments on tissue respiration indicate them to have, there is no apparent reason why the abundant lipoids should not be drafted into use.

1. Hirschberg, Else, and Winterstein, H.: Ueber den Zuckerstoffwechsel der nervösen Zentralorgane, Ztschr. f. physiol. Chem. **100**: 185, 1917. Hirschberg, E.: Der Umsatz verschiedener Zuckerarten im Stoffwechsel der nervösen Zentralorgane, ibid. **101**: 248, 1918.

2. Hirschberg, Else, and Winterstein, H.: Ueber den Stickstoffumsatz der nervösen Zentralorgane, Ztschr. f. physiol. Chem. **101**: 212, 1918.

3. Hirschberg, E., and Winterstein, H.: Ueber den Umsatz von Fettsubstanzen in den nervösen Zentralorganen, Ztschr. f. physiol. Chem. **105**: 1, 1919.

4. Mathews, A. P.: Physiological Chemistry, New York, 1915, Chapter XIII.

RENAL GLYCOSURIA

Interest in the subject of so-called renal diabetes has been greatly increased since estimations of the sugar content of the blood have become more commonly and easily carried out. The current conception of the condition referred to involves a glycosuria that occurs when the blood sugar is not significantly increased in amount, that is, when hyperglycemia cannot be demonstrated. The analogy of experimental phlorizin diabetes in which there is likewise a liberal renal output of sugar without any increase in the percentage content of sugar in the circulating medium of the body has frequently been referred to. In either case it has been assumed that the anomaly leading to the "renal glycosuria" resides in the kidneys, and that the disease is of renal rather than general metabolic significance.

A careful student of the subject has stated that "clinically, it is dangerous to make a diagnosis of renal diabetes until the patient has been under observation for several years."[1] This can scarcely be true in those instances in which the examination of the patient is controlled and supplemented by accurate and adequate laboratory data. Otherwise we should hesitate to refer to cases of "renal glycosuria" studied with exceptional care by Allen[2] and his co-workers in U. S. Army General Hospital No. 9 at Lakewood, N. J., where a diabetic service was instituted. Observation of three cases of the renal type as compared with thirty-seven cases of true diabetes in military service, and the increasing number of reports in the literature, as the determination of blood sugar content increases, led the army investigators to conclude that "renal" glycosuria is not as rare as once supposed, and probably is much commoner than other anomalies, such as pentosuria or levulosuria. It has by no means been definitely established, however, that the excreted sugar in "renal" glycosuria is in every instance identical with the common diabetic sugar, glucose.

As has been noted in earlier cases, no fixed relations were observed between the sugar in blood and urine. The renal excretion does not necessarily serve to maintain a low level of blood sugar. The output is not always higher with high than with low blood sugar. According to Allen's observations, the sugar excretion seems to be determined by the supply of available carbohydrate, especially preformed, but also to less degree by the potential carbohydrate of protein. The fat ration and total metabolism, which are important in true diabetes, are probably without influence.

No hypothesis that has been suggested thus far serves to explain satisfactorily the genesis of a condition of glycosuria apparently independent of hyperglycemia. As Allen and his co-workers point out, it is not yet proved that the abnormality lies in the kidney, or that it consists merely in a lowering of the normal threshold of sugar excretion. It is possible that cases differ in kind as well as degree, and that a group of anomalies have heretofore been included under this name. Fortunately, however, the prognosis in the persistent condition described is very favorable, thus standing in striking contrast with what so commonly obtains in true diabetes mellitus. Perhaps "renal" glycosuria will be found to represent only an exaggerated instance of the "glycuresis" which Benedict has described as occurring in normal man and leading to a minute though commonly present content of sugar in the urine.[3] In any event, now that the greater frequency of a relatively harmless renal glycosuria is appreciated, it will henceforth be more essential than ever before to make a differential diagnosis with the utmost accuracy that present clinical methods permit. One type of glycosuria may benefit greatly by suitable dietary restrictions, whereas the other rarer form does not require comparable personal sacrifices.

1. Joslin, E. P.: Treatment of Diabetes Mellitus, Philadelphia, 1917, p. 64.
2. Allen, F. M.: Wishart, Mary B., and Smith, L. M.: Three Cases of "Renal Glycosuria," Arch. Int. Med. **24**: 523 (Nov.) 1919.

SOME ASPECTS OF WAR EDEMA

The people of the United States were fortunate, during the past five years, in averting more than one disaster that has overtaken the inhabitants of some European countries. They have escaped the dangers of various infections; they have been far removed from the nervous depression and accompanying harm; and however restricted they may have been in diet, real physiologic deprivations of necessary food have not been felt to any considerable extent. Hence we must look abroad for direct evidences of the diseases that unusual deprivations have created or brought into prominence. "War edema," known in Napoleon's campaigns and sometimes observed in institutions in which restrictions in living conditions are enforced, was emphasized as a disease entity of widespread distribution in the last three years of the war.

The pathologist is wont to dwell on the special or immediate causes of edemas, on cardiac or renal factors, on inflammatory involvements, on neuropathic and even hereditary features that precede the symptoms. The phenomena of war edema must be related to antecedent causes which still need to be recognized clearly and determined with scientific accuracy before the complete etiology can be written. An unusually comprehensive investigation reported by Schittenhelm and Schlecht[4] of Kiel, as the result of elaborate studies amid an abundance of German cases, may assist in clearing up some of the disputed points. Aside from the somewhat differing symptoms of pain, fatigue, skin

3. Glycuresis versus Glycosuria, editorial, J. A. M. A. **72**: 1772 (June 14) 1919. J. Biol. Chem. **34**: 195 (April) 1918.
4. Schittenhelm, A., and Schlecht, H.: Ueber die Oedemkrankheit. I, Klinik und pathologische Anatomie der Oedemkrankheit, Ztschr. f. exper. Med. **9**: 1 (July) 1919; II, Das Oedem, ibid., p. 40; III, Chemische Untersuchungen von Blut und Oedemflüssigkeit bei der Oedemkrankheit, ibid., p. 68; IV, Stoffwechsel der Oedemkranken, ibid., p. 75; V, Die Pathogenese der Oedemkrankheit, ibid., p. 82.

disorders, localized edema, etc., there is unanimity in the finding of a greatly lowered condition of general nutrition. The subcutaneous adipose tissues are always entirely depleted; the musculature may be reduced to an exquisitely atrophic state, and the vigor of the subject is correspondingly diminished. Resistance to infectious invasions of the skin naturally decreases, leaving all sorts of cutaneous and subcutaneous disorders in its wake.

The recent tests in many illustrative cases show that the excretory capacity of the kidney for water and salt is not essentially decreased; hence it appears that edema of this type is not of renal origin. Not only this fact, but the entire symptomatology suggests that war edema represents an involvement of the entire organism in which the edematous features are only a single manifestation. The blood plasma has been found to be greatly diluted, as if there were a decided depletion of protein in the body. The restoration of the blood in respect to protein content is accordingly one of the early manifestations of feeding albuminous foods to edema patients.

Depletion of the body's reserves of nutriment furnishes the keynote to the pathogenesis of war edema. For a long time this loss of substance may not be apparent, because edema fluids replace the losses and, by keeping up the weight and contour of the body, simulate satisfactory nutrition. Chemical investigations tell the real story. Fats, lipoids and glycogen vanish; the blood is poorer in protein—not merely diluted with water; the composition of its corpuscles even is altered. Everywhere there is depletion; but this by no means implies that loss of calories per se is responsible. Here we come into the domain of controversy. Is war edema to be regarded as the outcome of severe undernutrition in general, or is it the expression of a specific deprivation, such as a lack of protein or fat or vitamins? At present it cannot be gainsaid that all of these factors may be involved. The admittedly specific deficiency diseases, such as beriberi, frequently include manifestations of edema, but it must be borne in mind that lack of vitamins is not infrequently associated with diminished food intake in general and with consequent depletion of other body reserves. Whether the organism requires a minimum of fat as truly as a quota of protein below which nutritive disaster is sure to be encountered remains to be seen. Aron[5] has lately contended that fats as such furnish constituents, aside from so-called fat-soluble vitamins, indispensable to the body. In the past much has been said about overfeeding of protein. The diet of war-time shortage abounds in carbohydrate which forms the basis of the intake of those compelled to live on restricted rations. May there not be an ill effect from undue increments in starch and sugar—an excess of carbohydrate?

These and other questions vigorously present themselves for consideration in connection with the mysterious war disease. As for the edema itself, we may quote the suggestion of Schittenhelm and Schlecht that scanty and one-sided diets may lead to imperfect make-up of the tissues—which includes that of the capillaries wherein the anatomic cause of the edema is to be sought. Arguing that even the war-time diets are not likely to be so utterly devoid of vitamins as to lead to the specific deficiency diseases classed as avitaminoses, the German clinicians are rather inclined to incriminate shortage of other food factors or overabundance of carbohydrate or both combined. Such dietary conditions are known to lead to camparable nutritive disorders, for example, the "Mehlnährschaden," in children. At any rate, the fact that it is possible for large masses of men to live and carry out their normal employment—as happened in Germany—on a much scantier diet than that to which they were accustomed can no longer be cited in support of the once widely quoted statement that "this state of economical nutrition seems to be without danger to health even when extended over several months."[6]

Current Comment

LEST YOU FORGET—"A REMINDER"

Three weeks ago a green slip, to be used in remitting subscriptions and Fellowship dues for 1920, was inserted in THE JOURNAL. This slip was circulated in place of statements addressed to individual subscribers and Fellows. A large number have returned the slips with their remittances, and their cooperation has resulted in a large saving for the Association in postage. For the convenience of those who have not yet made the remittance, another slip is inserted in this issue. Moreover, it will remind those who may have made use of the previous slip that they may take advantage of the clubbing offers announced on the colored insert in the front advertising section of this number.

PUPILLARY CHANGES IN SYPHILIS

Stress has been placed for many years on the importance of pupillary changes in the detection of latent syphilis and of certain diseases of syphilitic origin, such as locomotor ataxia and general paresis. These pupillary changes have usually been described as symptomatic of the late stages of the disease. Recently Nicolau[7] has called attention to the fact that pupillary changes are common in the early stages of syphilis. Thus, inequality of the pupils particularly may occur even before the appearance of the skin manifestations of secondary syphilis. Nicolau associates it with the early changes in the central nervous system which are

5. Aron, H.: Biochem. **92**: 211, 1918.

6. Report on the Food Requirements of Man and Their Variations According to Age, Sex, Size and Occupation, Food (War) Committee, Royal Society, London, Harrison & Sons, March, 1919, p. 16.

7. Nicolau: Ann. de dermat. et syph. **7**: 283, 1919.

evidenced by changes in the cerebrospinal fluid obtained by lumbar puncture. He recognizes the well known fact that pupillary inequalities are not infrequent in normal persons, and states that approximately 3 or 4 per cent. of normal persons show such changes. He maintains, however, that syphilitic persons show pupillary inequalities in the early stages of the disease in a much higher percentage of cases. At least 10 per cent. of early syphilitics were found to have marked pupillary inequality, and 70 per cent. showed slight pupillary inequality. While the value of these observations is somewhat impaired by the comparative frequency of pupillary inequality in normal persons, they are not without interest, and the sign will doubtless be of some value in conjunction with other signs. In doubtful cases of any disease the diagnosis is usually reached by combining many symptoms and signs which in themselves may be trifling.

COLD STORAGE TESTIMONIALS

The law which limits the length of time that food products may be kept in cold storage could with advantage have its scope extended to include "patent medicine" testimonials. Physicians recently received through the mails—at a time when the mails were frightfully congested with Christmas business—a sixteen page pamphlet sent out in a plain envelop as First Class Matter. The caption of the pamphlet reads: "Cough and Its Treatment in Pulmonary and Laryngeal Tuberculosis: By Henry Levien, M. D., While Medical Director and Physician-in-Charge of the Liberty Sanitarium, Liberty, N. Y. From the *Buffalo Medical Journal.*" The pamphlet is devoted to the alleged virtues of that dangerous and widely advertised nostrum, "Glyco-Heroin (Smith)," whose more recent and less descriptive name is now "Glykeron." Physicians might assume, and doubtless will assume, from the pamphlet that this reprint represents a recent pronouncement on the subject with which it deals. The facts are that the "Liberty Sanitarium" has, apparently, been out of existence for at least fifteen years, while the article itself originally appeared more than eighteen years ago—September, 1901. One of many physicians who sent in the copies received, called attention to the fact that he had left the address to which the pamphlet was directed, more than six years ago. Even at that, the mailing lists of the concern that sells this heroin-containing nostrum are more than twelve years ahead of its "clinical reports."

Medicated Soaps.—Medicated soaps are for the most part a snare and delusion so far as any increased germicidal action is concerned. In fact, the addition of carbolic acid, bichlorid of mercury, and other substances which have the property of combining chemically with the soap seems actually to diminish the disinfecting value of the substance. As a rule a very small quantity of the disinfecting substance is added to the soap, and when we call to mind what an exceedingly small quantity of soap is generally used for the ordinary washing of the skin and the further dilution of this small amount by the water used it is easy to understand that medicated soaps as ordinarily applied cannot have an energetic disinfecting action.—Rosenau, "Preventive Medicine and Hygiene."

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospials, education, public health, etc.)

ALABAMA

Child Hygiene Bureau Established.—The Birmingham Health Department, December 1, established a bureau of child hygiene. This bureau will undertake to teach child culture and to act in an advisory capacity to parents and to the other branches of the health department.

Infirmary to Be Remodeled—A permit was issued, November 17, for the Fraternal Hospital, Birmingham. The present building of the McAdory Infirmary is to be remodeled and additions made until the capacity of the institution will be 152 beds. Dr. Willington P. McAdory, Birmingham, is president, and Dr. John H. Stephens, Hendersonville, secretary of the new hospital organization, which is capitalized at $125,000.

Personal.—The Bureau of Venereal Disease Control of the State Board of Health has arranged with Dr. Hugh L. Appleton, Gadsden, to conduct a cooperative clinic in Gadsden.——Dr. Lloyd Noland, Birmingham, superintendent of health of the Tennessee Coal and Iron Railroad Company, was the guest of honor at a banquest, held December 13, in Birmingham, tendered by the district physicians and other officials of the department of health as a tribute to the achievements wrought by Dr. Noland in the organization of that work. Dr. Grosbeck Walsh, Birmingham, presided as toastmaster.

New Officers.—The Mobile Medical Society at its meeting, December 6, elected Dr. Alfred E. Maumenee, president; Dr. William H. Oates, vice president; Dr. Willis W. Scales, secretary, and Dr. Edly W. Cawthon, Plateau, treasurer.——At the annual meeting of the Jefferson County Medical Society in Birmingham, December 3, Dr. E. Marvin Mason, Birmingham, was elected president; Dr. Robert E. Cloud, Ensley, vice president, and Dr. Gaston W. Rogers, Birmingham, secretary-treasurer.——Montgomery Medical Society at its annual meeting elected Dr. Milton B. Kirkpatrick, president; Dr. Frederick F. P. Boswell, vice president; Dr. Abraham Tumper, secretary, and Dr. Forney C. Stevenson, treasurer.

CALIFORNIA

Orthopedic Hospital School to Be Established.—To meet the physical, educational, and vocational needs of crippled children, an orthopedic hospital school is to be established by the Los Angeles Orthopedic Foundation. The site for the proposed institution has been donated to the foundation by John Bruckman, in addition to which $60,000 has thus far been donated.

New Officers.—At the annual meeting of the San Diego County Medical Society, held December 9, Dr. Lyell C. Kinney was elected president; Dr. J. Perry Lewis, vice president; Dr. George B. Worthington, secretary, and Dr. Mott H. Arnold, secretary-treasurer, all of San Diego.——Sonoma County Medical Society at its annual meeting, held at Petaluma, December 11, elected Dr. Fred O. Butler, Eldridge, president; Dr. William C. Shipley, Cloverdale, vice president; Dr. Nils R. H. Juell, Santa Rosa, secretary, and Dr. Reuben M. Bonar, Santa Rosa, treasurer.

Lecture on Psychology and Health.—Prof. George M. Stratton of the University of California is giving a series of lectures during January and February on psychology and health. The lectures are being given in Emanu-El Auditorium, 1337 Sutter Street, San Francisco, on successive Friday evenings, beginning, January 9. The lectures will deal with the modern aspects of the relation of psychology and the principles of health and practice of medicine, with diseases of the mind, insanity, hypnotism, and with multiple topics on personality and other subjects They will be scientific in essence, but will not be technical in character.

Personal.—Dr. Eugene A. Hensel, San Diego, is under treatment in St. Joseph's Hospital.——Dr. Henry P. Newman, San Diego, who has been ill for several weeks, has recovered.——Dr. Paul W. Newcomer, Pomona, has been elected president of the Pomona Valley Medical Association, and Dr. William H. Eaton, Pomona, secretary.——Dr. Henry G.

Brainerd, Los Angeles, has been elected president of the Psychological Association of California.——Neal Naramore Wood, Major, M. C., U. S. Army, has been appointed first assistant superintendent of charities and medical director for the department of charities of the county of Los Angeles.

DISTRICT OF COLUMBIA

New Building for Society.—It is announced that during the next few weeks ground will be broken on a lot which has been purchased on M Street near Connecticut Avenue for the new building for the Medical Society of the District of Columbia.

Personal.—Dr. J. Ward Mankin, resident surgeon of Emergency Hospital, Washington, for two years, has resigned.——Dr. John F. Rooney, United States Public Health Service, was shot three times by a former soldier and a patient at Providence Hospital. Although the wounds are serious, Dr. Rooney is expected to recover.

New Officers.—The Medical Society of the District of Columbia, at its meeting, December 4, elected the following officers: president, Dr. Francis R. Hagner; vice presidents, Drs. Virgil B. Jackson and A. Frances Foye; recording secretary, Dr. Henry C. Macatee; corresponding secretary, Dr. J. Russell Verbryke, Jr., and treasurer, Dr. Edward G. Seibert.

GEORGIA

New Officers of Medical Board.—At the annual meeting of the state board of medical examiners, Dr. Jarrett W. Palmer, Ailey, was reelected president; Dr. Alfred F. White, Florilla, vice president, and Dr. Charles T. Nolan, Marietta, secretary-treasurer.

Personal.—The office of Dr. Amos C. Smith in the First National Bank Building, Elberton, has been destroyed by fire.——Dr. William E. Wood, Dalton, has been elected mayor in a hotly contested race with Dr. Jesse G. McAfee.——Dr. Taylor Lewis, Americus, sustained serious knife wounds of the abdomen and face in an affray recently.

Hospital Notes.—The Cheston King Sanitarium, Atlanta, has been secured by the United States Public Health Service which will use the institution as an emergency hospital and a clearing house for soldiers, sailors, marines and civilian employees of the government, through which patients will be sent to the various public health hospitals in the Southeast.

ILLINOIS

Personal.—Dr. Charles B. Caldwell, assistant superintendent of the Peoria State Hospital, South Bartonville, has been appointed superintendent of the Lincoln State School and Colony, succeeding Dr. Thomas H. Leonard.——Dr. Dudley B. Reid of the University of Chicago was elected president of the National Council of the American Physical Education Association at its annual meeting in New York City, January 1.

MAINE

New Officers.—At the annual meeting of the Penobscot County Medical Society, held in Bangor, the following officers were elected: Dr. William E. Fellows, president; Dr. Jarvis B. Wood, vice president, and Dr. Harry D. McNeil, secretary-treasurer, all of Bangor.

New Hospital Wing Under Construction.—A new wing to the Augusta General Hospital is being built, and will be ready for occupancy in March. The new building will be three stories and a basement in height, of steel and tile construction, 96 feet long and 40 feet wide, and will have three operating rooms on the third floor.

MARYLAND

Accident to University President.—Dr. Frank J. Goodnow, president of Johns Hopkins University, who suffered a fracture of the leg, January 11, is reported to be resting comfortably.

Whisky to Hospitals.—Every hospital and charitable institution in Baltimore will be given a generous quantity of whisky by Mrs. William Lanahan, owner of the wholesale liquor house of William Lanahan & Sons, who has announced that the entire stock in the warehouse will be distributed among hospitals and institutions.

Vaughan on Sanitation.—At a lecture before the members of the Johns Hopkins University School of Hygiene and Public Health, Dr. Victor C. Vaughan, professor of hygiene and physiologic chemistry at the University of Michigan, Ann Arbor, spoke at length on the influenza epidemic of 1918 and sanitation, expressing the belief that the limit of modern sanitation had been reached.

In Memory of Dr. Osler.—A joint meeting of the Medical and Chirurgical Faculty and the Book and Journal Club of the faculty was held at Osler Hall, January 13. This meeting was called in memory of the late Sir William Osler, and addresses were made by Dr. Lewellys F. Barker, Dr. Harry Friedenwald, Dr. John Ruhräh, all of Baltimore, and Dr. Francis R. Packard, Philadelphia.

Personal.—Dr. Robert H. Riley, Cumberland, has been appointed to the state board of health as chief of the bureau of communicable diseases of the state department of health. Dr. Riley was formerly chief bacteriologist of the health department of Oklahoma, and his affiliation with the local health department came as a result of a trip he made here to study public health administration methods.

Pathological Building Burns.—The Pathological Building of the Johns Hopkins Hospital group, the professional workship of Dr. William H. Welch, was wrecked by fire, January 12. It is said that none of the valuable specimens was lost, nor were any of the records of research work damaged. The fire necessitated the removal of twenty colored women patients from Ward O, but the patients in the maternity ward remained in their beds. Great credit is to be given to the nurses and physicians for their presence of mind in this emergency.

War on Social Evil.—To carry on active warfare against social evils and diseases, the Maryland Social Hygiene Society has opened headquarters in the Hoen Building, Baltimore. Dr. Hugh H. Young, Baltimore, has been elected president of the society and the other officers and the board of directors include many of the leading men of Baltimore. Legislation, law enforcement, thorough investigation of existing conditions, protective measures, urging the proper disposition of offenders by means of probation, commitment to institutions or custodial care, recreation, education and medical attention are among the activities planned by the organization. The association, which is the fusion of all the unofficial organizations of the state which have been combating social disease, will act as a clearing house in diffusing knowledge on social health and in conducting vigorous attacks on vice.

Raid on "Associated Doctors."—Through an exposé in the *Evening Sun*, the offices of the "Associated Doctors" which were raided by detectives and all paraphernalia used by them, including the widely advertised intravenous injection outfit and the fluoroscope and roentgen-ray apparatus, found to be imitations, were sent to detective headquarters. J. Newbold Kirk and G. G. Payne escaped arrest only because they had left the city, following the exposé in the newspaper. The attention of the police board was directed to the "Associated Doctors" by Dr. Herbert Harlan, Baltimore, president of the state board of medical examiners. Subsequent investigation showed that most of the work in the office was done by a registered physician, after an extensive door-to-door advertising campaign had been made. It is intimated at police headquarters that criminal action will be brought against the "Associated Doctors."

New Hospital Opposed.—Protests have been issued by persons interested in the South Baltimore General Hospital to the people of South Baltimore, Brooklyn, and Curtis Bay against the establishment of a competing hospital in the section from which the South Baltimore General Hospital draws its patronage. The protestants set forth that to care for the medical and surgical cases developing in the industrial district of South Baltimore, Brooklyn and Curtis Bay, the South Baltimore Eye and Ear Hospital was reorganized as the South Baltimore General Hospital and was thoroughly equipped to care for all kinds of injuries and diseases, supplied with a staff of trained physicians and nurses and is prepared to give this industrial district every possible advantage of modern hospital service. If the patronage of this territory is divided and the field occupied by a competing institution, it is apparent that instead of one institution being an assured success and constantly improving, two institutions could barely keep their heads above water.

Southern Sociological Congress.—The Southern Sociological Congress, which has headquarters in Washington, D. C., held its annual conference at the Medical and Chirurgical Faculty Building, Baltimore, January 6 and 7. The program for the opening session included as speakers Henry E. Jackson of the United States Bureau of Education and

Congressman S. D. Fess of Ohio; the subject under discussion was American citizenship. Judge Joseph A. McCulloch presided at the conference. Three sessions were held on January 7, and these were followed by a dinner at the City Club. The aim of the congress is to promote health, justice, patriotism, and training for citizenship, and to teach the sacredness of law both as to person and property, as well as to foster loyalty to home, church and government. It also aims to unite the religious, educational, civic and industrial factors of the South in a general movement to promote the welfare and conservation of human life. Its plan has been to accomplish the coordination of church and school so that the greatest benefit may be derived from both.

MASSACHUSETTS

Physician Decorated.—Dr. Charles S. Butler, Boston, has received from the French government the Cross of the Legion of Honor in recognition of his service to wounded French soldiers.

New Hospital.—A new building is to be erected for the Baptist Hospital, Boston, at a cost of about $500,000. The funds for the new building came from the estate of Mrs. Samuel N. Brown.

Personal.—Dr. Irwin H. Neff, formerly superintendent of the Foxboro State Hospital and for the past five years superintendent of the Norfolk State Hospital, Boston, has been made head of the Oak Grove Hospital, Flint, Mich.

Society Offers Reward.—The Essex South District Medical Society, December 27, offered a reward of $1,000 for information leading to the arrest and conviction of the person or persons who assaulted Dr. Hamlin P. Bennett, Lynn, December 24.

Banquet to Cabot.—The trustees of the New England Baptist Hospital gave a farewell banquet at the Hotel Vendome, Boston, January 3, to Dr. Hugh Cabot, head of the surgical staff of the Baptist Hospital for twenty years, who had accepted the post of head professor of surgery in the University of Michigan, Ann Arbor. Tributes to Dr. Cabot were paid by Col. Edward H. Hackett, Dr. George S. C. Badger, Boston, and Walter I. Badger, Albert H. Curtis, and others.

Honor to Sargent.—In recognition of his fifty years of continuous service in the physical training field, a banquet was given by the Sargent School Alumni Association to Dr. Sargent at the Hotel Vendome, Boston, December 27, at which many prominent educators, including Dr. Charles W. Eliot, professor emeritus of Harvard University, gave testimony that the untiring efforts of Dr. Sargent had resulted in making educational leaders throughout the world realize the value of physical education for children and college students. At the close of the evening a testimonial volume containing articles written in eulogy of his work was given Dr. Sargent.

Committee on Public Health.—This committee of the Massachusetts Medical Society has recently initiated several important movements in promoting the activities in the interest of which it was created. In addition to furnishing to the county medical societies speakers on subjects of preventive medicine, hygiene and public health, it has each year conducted a convocation on public health in which it has secured the cooperation of the United States Public Health Service, the Massachusetts State Department of Health, and the Massachusetts Association of Boards of Health. Two of these health convocations have been held in Boston, and recently a third was held at Springfield. The program for the Springfield convocation shows a wide range of subjects, including the state health program, personal and school hygiene, industrial hygiene, diet, special disease problems, and sanitation. The registration at these meetings has averaged about 225 people from over fifty cities and towns. These conferences have been attended not only by physicians, but also by health officials, public health nurses, and others professionally interested in public health. This committee consists of Dr. Enos H. Bigelow, chairman; Dr. Annie Lee Hamilton, secretary, and Drs. Edmond F. Cody, Victor Safford and Roger J. Lee.

NEW YORK

Personal.—Dr. Edward F. Brush has retired from office after serving eight terms as mayor of Mount Vernon.——Dr. Edward W. Mulligan, Rochester, was chosen director of reorganized Base Hospital No. 19, December 15.

New Officers.—At the annual meeting of the Monroe County Medical Society held in Rochester, December 16, Dr. Emory W. Ruggles was elected president; Dr. George H. Gage, vice president; Dr Benedict J. Duffy, secretary, and Dr. Irving E. Harris, treasurer, all of Rochester.

State Society Meeting.—The annual meeting of the Medical Society of the State of New York will be held in New York City, March 23 to 25. The house of delegates will meet at the New York Academy of Medicine, 17 West Forty-Third Street, March 22. The scientific sessions will be held on the second floor of the Waldorf-Astoria, and the third floor of the Hotel McAlpin. A section on neurology and psychiatry will be inaugurated on March 23. There will be an open meeting of the society at the Hotel Pennsylvania, March 23, which will be followed by the president's reception. The annual banquet will be given, March 24, in the ballroom of the Waldorf-Astoria.

Governor Smith Advocates Public Health Centers and Industrial Insurance.—Governor Smith, in his annual address to the legislature, recommends liberal provision for the department of health and redistricting the state so that each community can support a proper health administration. He expresses the view that the time has come when there should be some plan of reorganization within the counties themselves under the supervision of the state authorities. He urges the establishment throughout the state of an adequate system of public health centers, in conjunction with local health activities, where the necessary public health supervision can be provided for all classes of the population. He believes the state should subsidize local health efforts and thus bring about a coordination of public and private health facilities so that every health center could command the services of a full-time health officer and the necessary public health nurses. He reiterates his belief in the principle of compulsory health insurance for industrial workers. He says that legislation carrying this principle into execution can be so drawn as to safeguard the interests of the medical profession.

New York City

Harvey Society Lecture.—The sixth lecture of the Harvey Society Series will be delivered, January 24, by Dr. Carl Voegtlin, professor of pharmacology, United States Public Health Service, on "Recent Work in Pellagra."

New York's Banner Health Year.—Dr. Royal S. Copeland, Health Commissioner, announces that the death rate for 1919 is the lowest recorded in the fifty-three years that the Health Department has been organized. The death rate for the year 1919 was 12.39 per 1,000 population, as compared with a rate of 16.71 for 1918, and 13.94 for the five-year period from 1913 to 1917, inclusive.

Personal.—Dr. Simon Flexner of the Rockefeller Institute for Medical Research was elected an associate member of the Société de pathologie exotique, December 10; of the Société royale des sciences médicales et naturelles, December 1; and of the Société belge de biologie, December 6; and was also made a corresponding member of the Bataafsch Genootschap der Proefondervindelijke Wijsbegeerte, of Rotterdam, December 22.——Dr. Phoebus A. Levene of the Rockefeller Institute for Medical Research was elected an associate member of the Société royale des sciences médicales et naturelles, Brussels, December 1.——Dr. Joshua H. Leiner has been appointed adjunct attending neurologist to Lebanon Hospital.

Scabies in New York.—The health department reports that in certain parts of the city there has been a slight increase in the prevalence of scabies. Investigation shows that in a number of families in which cases have been found there have been returning soldiers and it is thought that this may account for the infection. The average number of cases reported for the year 1918 is much lower than for the preceding five years, while the total for the first three quarters of 1919 is within 194 cases of the total for 1918. The reports of all cases of scabies among schoolchildren are being carefully verified, and home visits are made by the school nurses for the purpose of ascertaining conditions and giving advice. Patients with scabies not under effective medical treatment are excluded from school.

Health Department Regulates Heating of Buildings.—At a meeting of the board of health, in December, 1919, Section 225 of the Sanitary Code was amended so that it shall be the duty of every person who has contracted or undertaken to furnish heat for any building or portion thereof, occupied as a home or place of residence of one or more people, or as a place of business, to furnish heat for every occupied room in such building so that a minimum temperature of 68 F. may be maintained therein at all times between the hours of 6 a. m. and 10 p. m. In the absence of a contract the owner, agent or lessee is deemed to have contracted or

bound himself or herself to furnish heat in accordance with the provisions of this section.

Association for the Prevention and Relief of Heart Disease.—This organization, recently installed in its new headquarters at 325 East Fifty-Seventh Street, is engaged in furthering the establishment of dispensary classes in many of the city hospitals for workingmen with crippled hearts. It also seeks the opening of more convalescent homes to patients with the milder types of heart disease and the founding of institutions for the continued care of permanent invalids from the same cause. The association has recently issued a pamphlet showing that there were, according to the statistics of the health department, 10,682 deaths from heart disease in this city in one year, while during the same period tuberculosis in all its forms caused 9,622 deaths and cancer 4,702. This serves to call attention to the importance of heart disease as a cause of disability and death. The pamphlet states further that not less than 25,000 schoolchildren in this city have permanently damaged hearts. The association is endeavoring to disseminate in popular form some of the facts with reference to heart disease and the need of treatment as has been done in regard to tuberculosis.

NORTH CAROLINA

Personal.—Dr. Sylvester Utter, Crab Creek, is reported to be in a critical condition at the Patton Memorial Hospital, Hendersonville, as the result of a gunshot wound accidentally received while hunting.

Malaria in Goldsboro.—A recent survey has shown that approximately 25 per cent. of the population of Goldsboro are suffering from malaria in some form, and the city with the assistance of the state and federal health authorities is beginning an antimalarial campaign.

OHIO

Trachoma Surveys.—The schools of Hamilton are being surveyed for trachoma. When the schools closed for the Christmas holidays, about 3,900 pupils had been examined and 104 cases of trachoma had been found. When the survey is completed a clinic will be held by the U. S. Public Health Service and the state department of health.——The survey of schoolchildren of Ross County for trachoma has been completed. The work was done by Dr. Rose Hopkins, assistant epidemiologist, state department of health, in cooperation with the local chapter of the Red Cross. Arrangements are now being made for a trachoma clinic to be held in Chillicothe some time in January.

Personal.—Dr. William G. List, Cincinnati, assistant superintendent of the Cincinnati General Hospital, has been appointed superintendent of the Minneapolis City Hospital, succeeding Dr. Herbert O. Collins, resigned.——Drs. James D. Parker and Carl R. Knoble have been made members of the Sandusky board of education.——Dr. John E. Mongor, Columbus, state registrar of vital statistics for four years, has resigned and has been succeeded by Dr. Ulysses G. Murrell, Wilmington.——Dr. Willard C. Rank, Newark, who has been ill with septicemia in Mount Carmel Hospital, is reported to be convalescent.——Dr. William R. Keller, Dover, has been elected commander of the Dover Post, No. 205, American Legion.

Legislature Amends Hughes Health Act.—The same legislature which adopted the Hughes act during the first part of their 1919 session has reconsidered its action and replaced it by the Griswold bill, which has now passed both houses and awaits the signature of the governor to become a law. The Supreme Court of Ohio, in a decision affecting another law, decided that the cities of Ohio could not be classified for purposes of legislation. This decision rendered it necessary to amend the Hughes act, as it classified cities as over and under 25,000 population. The legislature further amended it by removing the civil service provisions, by providing for whole or part time health commissioners, and by making the employment of nurses optional. Under the provisions of the new bill, cities may employ any one as a health officer, but in general health districts the health commissioner must be a licensed physician. The bill still permits counties and cities to have real health organizations and to do effective health work, and is a considerable advance over the old township and village law. The opposition to the Hughes act came largely from the rural districts and was based on the expense of the new system. Two hundred and seventy-six applicants from twenty-five states took the state civil service examination for district health commissioners under the Hughes act. Candidates were just about to be called to Columbus for a personal interview when the examination was called off on account of the action of the legislature.

PENNSYLVANIA

Tuberculosis Home Opened.—The Hackett Home, the new building for tuberculous women at Norristown State Hospital, was dedicated, January 7. This building, containing wards, private rooms, special observation rooms and sun parlors, was erected at a cost of $15,000. Dr. Jessie M. Peterson, Norristown, is in charge and under her is a staff of thirty nurses. The building will accommodate about 200 patients.

Personal.—Dr. Claude P Brown, Ambler, Major, M. C., U. S. Army, has been made commander of Post 125, American Legion, Ambler.——Dr. Albert H. Wilkinson, Wilkes-Barre, has been elected medical superintendent of the Roper Hospital, Charleston.——Dr. Samuel B. Horning, Coolegeville, has announced his retirement from the practice of medicine, and will spend the rest of the winter in Florida.——Dr. Joseph Scattergood has been appointed local surgeon of the Pennsylvania system at West Chester, succeeding Dr. Percy C. Hoskins, deceased.

Philadelphia

Food Demonstration at Dietetic Center.—January 6, the dietetic center connected with the Jefferson chest department for nurses and social workers held an open demonstration of cooking and nutritious foods for mothers of the district.

Health Department Advisory Group Named.—Director Clinton L. Furbush of public health and charities, January 9, announced the appointment of a general advisory council for the department of health, and named eight committees, composed of prominent men and women of the city, to act as auxiliaries to the regularly employed officials of the department.

New Officers.—Physicians' Motor Club of Philadelphia: president, Dr. S. Leon Gans; vice presidents, Drs. John J. Robrecht, Charles R. Haig, Jr., and J. Torrance Rugh; secretary, Dr. Howard A. Sutton, and treasurer, Dr. Lewis H. Adler, Jr.——Philadelphia Association of Industrial Medicine: president, Dr. Mervyn Ross Taylor; vice president, Dr. Lorne E. Hastings; secretary, Harry M. Gay, Camden, N. J., and treasurer, Dr. Robert Perry Cummins.——West Philadelphia Medical Association: president, Dr Henry B. Kobler; vice president, Dr. D. Clinton Guthrie; secretary, Dr. Henry G. Munson, and treasurer, Dr. Edmund L. Graf.——Northern Medical Association: president, Dr. Mulford K. Fisher; vice president, Dr. James H. McKee; secretary, Dr. Robert Boyer, and treasurer, Dr. John W. Millick.——West Branch Medical Society: chairman, Dr. Collin Foulkrod; vice chairman, Dr. D. Randall MacCarroll, and clerk, Dr. Ralph Getelman.

SOUTH CAROLINA

Work Against Trachoma.—Dr. Joseph L. Goodwyn, United States Public Health Service, has commenced his work in Lexington, and has already operated on and treated about fifty patients with trachoma.

Medical Society Meeting.—The annual meeting of the Charleston County Medical Society was held in Charleston, December 8, and the following officers were elected: president, Dr. Robert Wilson, Jr.; secretary, Dr. George F. Heidt, and treasurer, Joseph H. Cannon, all of Charleston.

Faculty Changes.—Dr. John Van de Erve, Milwaukee, has been elected professor of physiology in the Medical College of the State of South Carolina.——Dr. Lane Mullally, who resigned as professor of obstetrics on account of ill health, has been elected emeritus professor of obstetrics and has been succeeded by Dr. G. Fraser Wilson.——Dr. John F. Townsend, Charleston, has been elected assistant professor of ophthalmology and otology.——Dr. Julius C. Sosnowski, Edward H. Sparkman, Jr., and Joseph S. Rhame, Jr., have been elected assistant professors of surgery.

VIRGINIA

Preventable Disease Commission Named.—Governor Davis has announced the appointment of Drs. N. Thomas Ennett and A. Murat Willis, Richmond; J. Hoge Ricks, Richmond; Lindsay Gordan, Louisa, and A. F. Thomas, Lynchburg, as members of the division of preventable disease authorized by the last session of the general assembly.

Hospital Items.—Buxton Hospital is building a new nurses' home, which it hopes to have completed by about

April 1, 1920.——A budget of $350,000 has been submitted to the governor by the Hospital College of Medicine of Virginia. This includes the funds necessary to complete and equip the new negro hospital and the Dooley Hospital for contagious diseases and to maintain the three hospitals for one year.——Plans have been filed for an addition to the Stuart Circle Hospital, Richmond, to cost $132,000. The new addition will be six stories in height and of fireproof construction.

Personal.—Dr. W. F. Rudd of the department of chemistry of the Medical College of Virginia, Richmond, has been elected president of the American Conference of Pharmaceutical Faculties.——Dr. Herbert Mann, Richmond, has been elected surgeon of the Virginia Penitentiary for a third term of four years.——Dr. John H. Crum, Louisa, has been placed in charge of the local station of the United States Public Health Service.——Dr. Howard Armstrong, Edom, has been elected city health officer of Harrisonburg.——Dr. Elisha L. McGill, Petersburg, has been appointed coroner of Dinwiddie County, succeeding Dr. William H. Crockford, Jr., deceased.

New Officers.—Lynchburg and Campbell County Medical Society, at its annual meeting in Lynchburg, December 21, elected Dr. John W. Carroll, president; Dr. Bernard H. Kyle, vice president, and Dr. Edward F. Younger, secretary-treasurer.—At the annual meeting of the medical faculty of Petersburg, the following officers were elected: president, Dr. Edwin J. Nixon; vice presidents, Drs. Fletcher J. Wright, Petersburg, and George Reese; secretary-treasurer, Dr. John M. Harwood, Richmond, and corresponding secretary, Dr. William C. Powell, Petersburg.——Prince George County Medical Association, at its annual meeting held in Hopewell, elected Dr. William D. Daniel, Disputanta, president.——At the annual meeting of the Richmond Academy of Medicine and Surgery, the following officers were elected: president, Dr. J. Garnett Nelson; vice presidents, Drs. Ramon D. Garcin, George C. Woodson, and William B. Porter; secretary, Dr. Mark W. Peyser (reelected); assistant secretary, Dr. Emmett H. Terrell (reelected), and Dr. Howard Urbach, treasurer (reelected), all of Richmond.

CANADA

New Montreal Hospital.—A bill has been introduced into the Quebec legislature for the incorporation of the St. Mary's Memorial Hospital in Montreal. The institution is intended to make up for the shortage of hospital accommodation in that city.

Public Health Statistics.—There were almost 2,000 fewer deaths from communicable diseases in Ontario in 1919 than in 1918. The great falling off is due to the absence of the influenza and pneumonia scourge which swept the province in the latter part of 1918. There were more tuberculosis fatalities in 1919, the total number being 1,722 as against 1,359 in 1918.

Public Health at Ottawa.—The public health department of the Canadian Conservation Commission at Ottawa has been placed under the new federal department of health. Dr. Charles A. Hodgetts, Ottawa, who has been for many years medical adviser to the conservation commission, takes office in the new department and is given charge of statistics, information, publication, library and circulation.

Smallpox.—The total number of smallpox cases in Toronto at the present time, January 8, is 449, eighteen new cases occurring a day. The epidemic seems to be declining. Altogether there have been about 2,000 cases.——The Provincial Board of Health of Ontario will take no further action toward compulsory vaccination in Toronto. The board recently applied to the court of appeal to compel the city to order general compulsory vaccination, but the order was refused by the judges, who stated the Ontario Vaccination Act had not been properly drawn.——Certificates of vaccination are no longer satisfactory to United States border authorities for Canadians entering that country. It must be shown that the operation has been successful.——The entire province of Quebec is now in a state of quarantine against Ontario. Even residents of Quebec who visit in Ontario will not be allowed to reenter their own province unless provided with a vaccination certificate.

GENERAL

Proctologists to Meet.—The American Proctological Society will hold its annual meeting in Memphis, Tenn., April 22 and 23, under the presidency of Dr. Collier F. Martin, Philadelphia.

Bill for Marine Hospital in California.—Julius Kahn of California has introduced a bill appropriating $600,000 for the erection of a marine hospital on the present marine hospital site at San Francisco and to remove the present structure.

Child Labor Day.—The National Child Labor Committee announces that child labor day will be observed by churches on January 25, by synagogues, January 24, and by schools and clubs, January 26. On these days, the needs of children are to be discussed, viewing the subject in the higher moral aspects and urging the furtherance of child welfare activities.

Medical Men Needed for Overseas Service.—Brig.-Gen. Robert E. Noble, M. C., U. S. Army, makes an appeal for fifty medical men for Red Cross service overseas, for a period of at least one year. Practitioners are desired who have had military experience. The salary will be that of their previous rank in the military service with the 10 per cent. addition for overseas service and a liberal commutation allowance.

Joint Resolution for Control of Malaria.—Senator Harris of Georgia has introduced a joint resolution "to enable the Public Health Service to cooperate with states in the investigation and control of malaria." It provides for carrying on measures for the control of malaria through the respective state boards of health and the Federal Public Health Service. Five hundred thousand dollars were appropriated for the work, but no expenditures are to be made in any state until an equal sum shall have been appropriated by the legislature of a state or county or by individual contribution for malaria control work.

Committee on Industrial Dermatoses.—The National Safety Council, 168 North Michigan Avenue, Chicago, through a special committee is undertaking a survey of the relation of occupational factors to the production of skin diseases. The committee has issued a questionnaire designed to elicit information regarding the prevalence and distribution of industrial dermatoses, including any abnormalities of the skin or appendages that result from special manufacturing processes. The council proposes to compile the data, and to act as a clearing house for information on methods of control and treatment of industrial skin diseases.

Specialists Convene.—The Federation of Societies for Experimental Biology held its annual meeting in Cincinnati, December 29 to 31. This meeting would have been held in Toronto but for the smallpox quarantine. This federation includes the American Physiological Society, the American Bio-Chemical Society, the American Society of Pharmacologists, and the Society for Experimental Pathology. At the closing session of the American Bio-Chemical Society, Dr. Stanley J. Benedict, Ithaca, N. Y., was elected president; Dr. Victor C. Meyers, secretary, and Howard Bradley of the University of Wisconsin, Madison, treasurer.——Dr. William H. Park, New York City, was elected president of the Society for Experimental Pathology; Dr. Warren P. Lombard of the University of Michigan, Ann Arbor, president of the American Physiological Society, and Dr. Arthur S. Loevenhart, Madison, retiring president of the federation. president of the American Pharmacologists' Society.

Different Types of Botulism.—The department of animal husbandry of the University of Illinois for some years has been particularly interested in the subject of botulism and has made a serum for combating the disease. Specimens of the olives that were responsible for the outbreak of botulism in Detroit were sent to the department, which has reached the conclusion that this outbreak was due to a different strain of *Bacillus botulinus* than that heretofore isolated from contaminated food of animal or man. We have received the following statement on the subject from the university:

The Animal Husbandry Department of the University of Illinois, in studying a disease of animals commonly called forage poison, has apparently brought out the close relation of this disease to botulism in man. Experimental serum developed for the prevention of the disease in horses and mules has, in addition to veterinary use, been furnished on request to physicians for emergency treatment of botulism in man. In the light of our present knowledge, the immune serum, to be effective, must possess the highest degree of potency and should be used before symptoms appear or in the early stages of the disease.

A bacteriologic examination at the university of poisonous olives, recently implicated as the causative factor of the fatal food poisoning recognized as botulism in Detroit, has disclosed the fact that the strain of *Bacillus botulinus* encountered in the olives is a different and probably distinct type than heretofore isolated from contaminated food of animal or man, in our experience. This information is highly important to the veterinary and medical profession, in view of the more frequent recognition of this disease in recent years. In preliminary studies of botulism in animals, more frequently designated as forage

poisoning, all outbreaks studied to date occurring in the Mississippi Valley proved to be associated with a common strain of *B. botulinus*, but in view of tests recently conducted, it appears that more than one type of this disease may prevail.

It is obvious that if more than one type of poisonous micro-organisms of the botulinus type produce distinct and separate varieties of poisoning, botulinus antitoxin need be prepared against each disease producing strain if a consistent and high degree of efficiency is to be attained in prophylactic treatment. It is also reasonable to presume that the favorable results recorded in the laboratory may be gradually applied to natural outbreaks of this disease in animals with a fair degree of success and bid fair to curtail the tragedy of botulism in man.

FOREIGN

Prize Awarded to Escomel.—Among the prizes distributed by the Paris Académie de Médecine at its recent annual public meeting was one to Dr. E. Escomel of Arequipa, Peru. The Monbinne prize of 1,500 francs was divided between him and H. Velu of Casablanca.

Physicians as Aldermen.—The *Journal de médecine* of Bordeaux relates that the recent local elections resulted in four physicians being elected to the *Conseil municipal*, Professors Arnozan and Sigalas, the latter the dean of the university; Moure, the ear and throat specialist, and Lamarque.

Deaths in the Profession Abroad.—Dr. **D. Bocciardo,** instructor in pathology at the University of Genoa, serving at the front during the war as radiologist, aged 44.——Dr. **R. Rainaldi** of Narni, Italy, author of works on neuropathology and forensic medicine, aged 63.——Dr. **A. Werner,** professor of chemistry at the University of Zurich, recipient of the Nobel prize in chemistry in 1913.

The Crisis in the Medical Journals.—Under this heading the *Policlinico* of Rome, the leading medical journal of Italy, comments on the lack of appreciation of the scientific press on the part of the authorities. They make no efforts to smooth the rocky path for the medical journals. In France, conditions are the same; a recent editorial in one was entitled "L'agonie des journaux scientifiques." The *Policlinico* states, "The daily press in Italy is allowed to buy paper at reduced rates and various other concessions are accorded the lay press, while the medical journals—which aided so materially in the winning of the war and in the maintaining of the public health at all times by the prompt dissemination of every progress in treating the sick and wounded and in preventive medicine—the medical press is allowed to be crushed by the high prices of paper and labor." The *Policlinico* compares with this disregard of the scientific press the opposite system in Germany, the privileges granted the leading medical journals in Germany. "During the war and since the war they have been able to get their paper much as usual and at reduced rates and their subsidies from the state have not been allowed to lapse. . . . And we victorious Latins are showing ourselves more barbarian than the barbarians!" The few "Zeitschrifts" and "Archivs" that have reached America, published in 1918 and 1919, have the same paper, the same typographical appearance and the same size as the numbers issued before the war. The weeklies also compare favorably with the before-the-war issues except that the paper is of a slightly poorer grade.

LATIN AMERICA

Personal.—Dr. M. J. Wunderlich, Guatemala City, is now visiting in this country with his family.

Prophylactic Institute in Paraguay—Under the direction of Dr. Victor Idoyaga a prophylactic institute has been organized recently in La Asunción.

Pasteur Institute in Nicaragua.—Recently a Pasteur Institute has been inaugurated at Managua, Nicaragua, presented to that country by the president of Mexico. The institute has therefore been named Instituto Antirábico Carranza.

New Sanitary Regulations in Santo Domingo.—A recent amendment to the sanitary code of Santo Domingo divides all towns for sanitary purposes into four groups according to their population: namely, of less than 1,000 inhabitants; from 1,000 to 5,000; from 5,000 to 10,000, and over 10,000.

Public Health Association in Colombia.—There has been organized at Bogotá an association under the name Sociedad Sanitaria de Bogotá, which will have for its purpose the cleaning of the city in order to eradicate all infectious diseases having for their cause impure water supplies and personal uncleanliness.

Congress of Practitioners.—The Sociedade de Medicina e Cirurgia of Rio de Janeiro has taken the initiative in organizing a Congresso dos Medicos Praticos to be held in connection with the Pan-American Medical Congress on the occasion of the celebration of the centenary of the independence of Brazil. The Practitioners' Congress will have five sections: public hospitals and other charities; public health and preventive medicine; social medicine; practice of the profession, and medical education. The *Brazil-Medico* gives the five to ten different topics appointed for discussion in these five sections. Among the topics to be discussed in the section on medical education are the limitation of the number of medical students; national graduate courses, and study trips to other lands. This section is in charge of Prof. Miguel Couto.

Government Services

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CONNECTICUT
New Haven—Rapoport, F. H.

INDIANA
Vevay—Shadday, A. A.

MICHIGAN
Detroit—Van Volkenburgh, V. A.

OHIO
Dover—Shaweker, M.

NEW YORK
Brooklyn—Gastineau, F. M.
New York—Jablons, A.
Klapper, H.

PENNSYLVANIA
Nesquehoning—Griffith, R. S.
Philadelphia—McGlinn, J. A.

WASHINGTON
Seattle—Cole, T. O.

Personnel of the Medical Corps

For the week ending January 9, the Medical Corps contained 2,153 medical officers; the Medical Reserve Corps contained 4,348 officers, an increase of 99 over the previous week.

Legislation in Interest of Reserve Officers

A bill has been introduced by Congressman S. R. Sells of Tennessee which provides that allowances of officers in the Medical Reserve Corps of the Army shall be computed in accordance with the time served by them as contract surgeons. This bill would give longevity pay allowances as contract surgeons in addition to the time they are in the regular service.

New Legislation for Army Medical Corps

January 9, Senator Wadsworth of New York, chairman of the Committee on Military Affairs, introduced the Army reorganization bill in the Senate. Section 33 of this bill relates to the medical service of the Army, and will create a large number of vacancies in the Medical Corps in the grades of major, lieutenant-colonel and colonel. This is due to the fact that the bill fixes certain age limits in promoting medical officers now in the Army, and few present officers can qualify. For instance, this section provides that "commissioned officers shall be promoted to the grade of captain on completion of three years' service; major fourteen years, lieutenant-colonel, twenty and colonel twenty-six years' service." Vacancies thus created will be filled by appointment, on due examination, from "persons under the age of 50 years who shall have served as officers in the Medical, Dental or Veterinary Corps in the U. S. Army between April 6, 1917 and Nov. 11, 1918." The Wadsworth bill also contains a provision for commissioning the Army Nurse Corps. The bill substantially adopts the so-called Riker-Jones bill, which has been before Congress for several months, and will make Army nurses commissioned officers. Nurses who act as superintendents will have the relative rank of major; assistant superintendents, directors and assistant directors, the relative rank of captain; chief nurses, the relative rank of first lieutenant, and nurses the relative rank of second lieutenant. Nurses will wear insignia to indicate their rank as may be prescribed by Army regulations. The Wadsworth bill will become the committee bill because Senator Wadsworth is chairman of the Committee on Military Affairs, and it is quite likely that this bill will be the basis of all military legislation at the present Congress. The bill contains provision for a system of universal military training for youths between 18 and 21, the recognition of the National Guard of the United States in each state and the maintenance of the Reserve Officers' Training Corps.

Foreign Correspondence

LONDON

Dec. 17, 1919.

The Number of New Practitioners Registered

At the General Medical Council, the president, Sir Donald Macalister, delivered an address in which he stated that two years ago he predicted that in 1919 the number of new physicians registered would be far below the average. The registrations to date proved the truth of his prophecy, although some compensation had been afforded by the addition of 400 British practitioners to the colonial list of the register. The province of Alberta in Canada had now legislated in favor of medical reciprocity with the United Kingdom. Only one province of the Dominions, British Columbia, now remained outside the agreements concluded between the United Kingdom and the British Empire beyond the seas. The number of registered medical and dental students for 1919 are, as was also foreseen, greatly in excess of former records. They are filling the schools to overflowing. Some schools, indeed, have had to postpone all fresh admissions until next April. Apparently in a few years the professional ranks will be more than replenished. In some minds the expected influx is causing anxiety least the new practitioners may not all find employment when they reach the register. But the wastage of war has been great and the openings for skilled men and women would be multiplied by the increased activities of the new authorities concerned with the conservation of the health and physical welfare of the people. There would, in fact, be many new demands which no doubt would ultimately match the new supplies.

Representatives of the National Board of Medical Examiners of the United States recently visited this country with the object of studying and reporting on the methods employed here for the testing of candidates for medical qualification and for the control of their registration as practitioners. The registrar was instructed to place at their disposal the fullest information which the office possessed. By courtesy of the licensing bodies the representatives attended a number of the qualifying examinations. They stated that they derived much valuable knowledge from their visit. The influential movement toward the establishment of a high and uniform standard of professional qualification throughout the American commonwealth, of which the National Board of Medical Examiners is the expression, might have issues of importance extending beyond the United States.

Tribal Ties in Modern Nations

Prof. Arthur Keith delivered the Boyle lecture before the Junior Scientific Club at Oxford on this subject and threw a philosophical light on problems that have proved very thorny for the politicians. He said that the modern problems of race and nationality were due to the struggle between inherited tribal instincts and the conditions of existing civilization. We had broken up or were attempting to break up Nature's ancient tribal machinery, and were striving to replace her designs by others evolved in the minds of modern statesmen and politicians. The United States showed one of the most acute of the struggles that arise whenever races or nationalities came into close contact. Within the frontiers of the States was massed a population of 110 millions. More than 10 millions of these were marked off from the rest by a frontier, a color line, as sharply defined and jealously guarded as the frontiers of a kingdom. Across that racial frontier all legitimate social traffic was barred, the custodians of the frontier line being those who stood on the white side. Any attempt to cross produced mob war. While these 10 millions of segregated citizens abode within their racial fence they saw millions arise from Europe and pass freely through the national and social gateways which for them were barred. In the course of a generation they saw these new arrivals become slowly stripped of their alien outlook and gradually incorporated within a new national mass. In the States, then, a machinery was at work which maintained racial frontiers but broke down all national barriers. In Canada a mechanism was at work which converted immigrants of alien nationalities into loyal Canadians. But the artificial segregation of French Canadians in the province of Quebec might tend to turn a national differentation into a racial differentiation. On the other hand, on the Pacific Coast there was a tendency to maintain a racial barrier against the Japanese and Chinese. In Spanish America a huge problem had arisen because, while the Nordic race in North America had maintained its distinctness from Indian blood, in Mexico and South America an Iberian stock of European origin had blended with Indian blood. The Nordic European had preserved a feeling of race caste absent in the Iberian European, more closely akin to African races. A still more potent historical influence was that the Iberian immigrants had originally been male adventurers in whom the sex instinct overcame race instinct, whereas the Nordic immigrants had been of both sexes.

There were two processes of nationalization at work in Europe. All the great nationalities of Europe—France, Germany, Great Britain, Italy and Spain—had been built up by fusion. In these cases the process had been from above downward, from statesmen and rulers to the people. On the other hand, Nature's method was by disruption. The people of Norway and Sweden were of the same racial composition, and union would have given them strength. But a tribal feeling which swept through the people of Norway compelled a disruption. Ireland was another case in which the tribal instinct had flamed up, producing a desire for separation, which had no basis in race or interests. Force would be no response. All that a statesman could do was to provide conditions in which a favorable spirit was most likely to develop and mature.

LIÉGE

Nov. 30, 1919.

Belgian Surgical Congress

THE WILLEMS METHOD

It was appropriate that after five years of war the first meeting of the Belgian Surgical Society, observing the twenty-fifth anniversary of its foundation, should celebrate the most valuable acquisition that the surgery of the war has given us, namely, immediate active mobilization in joint lesions. The treatment that Willems introduced has brought fame to Belgian surgery, and at the present time the Willems method is accepted in principle by all surgeons of the Allies. At the meeting held September 27, Willems described the excellent results secured by his therapeutic method. The indications for this treatment have been extended, and it would seem now that the principle of immediate active mobilization should be applied in all joint lesions, whether simple or compound, and even in the septic complications of purulent arthritis. No doubt there are cases in which the method cannot be applied inflexibly, for instance, in extensive bone fractures, or in lesions of the extensor muscles that forcibly limit the use of voluntary mobilization on the part of the patient himself. However, even in such cases a slight attempt at voluntary movements, supplemented by passive mobilization, will render good service. At this meeting of the Belgian Surgical Society, Willems emphasized especially certain details in the application of the method and the necessity of prolonging the mobilizing treatment over a long period of time. Willems stated that very often the failures reported by certain writers after using his method are due to its incorrect application. Above all, mobilization must be immediate and active. These two conditions must be strictly carried out, and their observance requires a well trained hospital personnel. If proper precautions are taken, it would not seem that treatment by means of mobilization is contraindicated in any joint lesion; for, even in extensive bone fractures, mobilization in the splint can be begun while at the same time the fracture is being reduced.

A distinction must be made between the elbow and the knee: In the case of the elbow, conservation of mobility; in the knee, of solidity, is the principal thing. In certain cases in which the knee has been kept mobile, it will occasionally be necessary to have recourse to an extra support in order to consolidate a joint that is badly shattered. Willems rejects all primary resections for the reason that they appear to him to rest on a premature decision; to his mind secondary resections are alone indicated.

While paying homage to M. Willems as the inventor of this method during the war, Delrez reported the results that he had secured by the use of the method; he also endeavored to point out the limits of its application. He is more conservative than the author of the method and as a rule refrains from applying it in case the joint wound is complicated by extensive damage to muscles, chiefly through fear of setting up an infection. Aside from this restriction, the treatment recommended by Delrez is identical with that of Willems. We shall not take up again the operative technic that is applicable in joint wounds or the indications for intervention, as these questions have already been discussed; but

let us note especially in Delrez' report the restorative operations that he had occasion to perform on the war wounded. In wounds of the shoulder in case the deltoid has been severed transversely, causing a linear scar which prevents the elevation of the arm, relief may be secured secondarily by excision of the cicatricial tissue and suturing of the two muscle fragments. The member is kept in abduction for a certain length of time. Delrez referred to several cases of loose shoulder and elbow joints that were treated by suspension, the results of which were very encouraging; also to transplant operations in the region of the knee; once of a condyle, another time of a patella, taken from the cadaver and preserved in alcohol.

SURGICAL TREATMENT IN POTT'S DISEASE

The second topic treated at the surgical congress is likewise of great importance. A lengthy discussion arose in regard to the therapeutic treatment of Pott's disease. The American authors recommend immobilization of the vertebral joints in the vicinity of the lesion either by arthrodesis of the arches of the vertebrae and transposition of the spinous processes (Hibbs) or by grafting pieces of bone into the spinous processes (Albee). The French authors (Calvé especially) are opposed to such intervention ordinarily and apply it only in cases of recovery from Pott's disease in order to give greater solidity and make the cure more definite. Calot is of the same opinion; in fact, he goes so far as to claim to be the originator of the Hibbs method, although he combats it.

Maffei has, since 1914, given treatment in fifty-three cases of Pott's disease, in nineteen of which the Albee method of operation was employed. He called special attention to the fact that in 1915 and 1916 the patients operated on recovered much more slowly and with greater difficulty, which he thinks was due to undernutrition consequent on the bad food conditions during the occupation. In seventeen cases a prompt cure was effected. He considers that the Albee operation is conservative, capable of immobilizing the lesions and therefore justified. However, its curative value in Pott's disease is negligible; the evolution of the disease continues.

Lorthioir, who also gave a report, agreed with Maffei that the operation of itself did not effect a cure. It is, he stated, a simple means of fixation which avoids the necessity of immobilizing the patient or of the wearing of a plaster cast or a corrective brace. This was the only consideration (a palliative and not a curative operation) that guided him in the cases in which he operated by the Albee method and used a tibial or a costal graft. General statistics on the subject that he has gathered in regard to operative methods and to conservative methods lead him to the rather significant conclusion that the percentage of mortality in cases in which general operative methods were employed was 7.6, and in cases in which conservative methods were used, 7.7. From these facts, Lorthioir added, the conclusion may be reached that the operative method has only minimal influence on the mortality rate in Pott's disease, but that it does exert an influence on the duration of treatment, shortening it to an extent worth while, and also saving the patient the long torture of forced immobilization, either total or partial.

THORACOPULMONARY WOUNDS

The studies of thoracic wounds carried out by Derache and by Janssen give a summary of the statistics of the war on the Belgian front. The anatomic study of wounds, the symptomatology, and the complications of pleuropulmonary traumatisms constitute the principal chapters of these two interesting reports. They take up especially the septic complications of hemothorax and the treatment of pyothorax. The short drain and irreversible drainage by Delagénière's valve drain are the two best means of draining a pyothorax. Pleural lavage is not often indicated. However, Depage and Tuffier secured remarkable results by sterilization of the pleural cavity by means of interrupted irrigations of surgical solution of chlorinated soda (Dakin's solution), which allows of early closure of the thorax.

The two essayists spoke highly of Pierre Duval, the great originator of war surgery of the lung. The clearer conceptions in regard to the relatively slight gravity of operative pneumothorax opened up at once renewed activity in the whole domain of intrathoracic surgery. The extraction of intrapulmonary projectiles by means of a wide opening in the thorax has caused a revolution in pulmonary surgery that is very hopeful. The technic of this intervention has now been definitely determined. It remains to fix the operative indications. Janssen says in his report that many authors recommend systematic intervention and that he feels more and more inclined to coincide with their views. Derache is less decided; he thinks that many times shell fragments and bullets may be well tolerated. He believes that definite indications for this intervention should be present and that no absolute formula should be set up. The decision may well be left to the surgeon's clinical judgment. Furthermore, certain objective signs will furnish elements that will aid in reaching a decision, for example, repeated slight hemoptysis, sharp pains accompanied by dyspnea, pulmonary congestion, and formation of an abscess.

PARIS

Dec. 11, 1919.

Hospital Ships During the War

Dr. Chevalier, general medical inspector of the Public Health and Marine Hospital Service, recently made an interesting report to the Academy of Medicine on the subject of hospital ships during the war. The part that these ships were to play during the war proved to be quite different from what was anticipated. As there were no great naval combats, they helped transport to the interior the wounded coming from the various battle areas. During the first month of the war they aided in transporting the wounded of the army of Flanders, thus supplementing the inadequate transportation facilities of the railroads. At the beginning of February, 1915, they began to operate in the Mediterranean, bringing home 220,000 wounded and sick from various Mediterranean fronts in the East. Toulon and Bizerta received 147,000 and 64,000, respectively, while in the ports of Algeria 5,000 were debarked. After the first conflicts in the Dardanelles a certain proportion of the sick and wounded were taken to Egypt. The ports of debarkation were informed in advance by wireless of the number of wounded on board the ships. Experience has shown that the hospital ships constitute a most valuable means of evacuating the sick and the wounded. The men are well quartered, well fed and have constant medical care. The rocking of the boat is the only disadvantage, but this is very slight owing to the great size of the steamers, and is at least preferable to the shaking of the railway trains. A great amount of surgical work was done on board. In one instance a single surgeon, during the course of several voyages representing thirty-nine days of hospitalization, treated 1,884 wounded and performed 155 major operations. Another surgeon, in fifteen crossings, performed 968 operations, 300 of which were under general anesthesia. It is to be hoped that in the future, instead of its being necessary in an emergency to use boats that have been remodeled, enough hospital ships will be constructed in advance, according to special plans, and that the medical supplies for these ships will also be on hand in ample quantities in whatever port constitutes their base.

Conference of French and Swiss University Authorities

At the invitation of the University of Geneva, a conference of French and Swiss university authorities was held recently. Delegates from the French universities and from the Swiss universities, including both those of so-called French and of German Switzerland, convened at Geneva and took up the question of establishing proper university relations between the two countries, particularly as regards the exchange of students and professors. The medical faculties were represented at the conference by four Swiss professors and by two French professors, the regretted Lépine of Lyons and Dr. J. Vanverts, professor in the University of Lille. The conference passed a resolution to the effect that French and Swiss medical students holding a baccalaureate degree and provided with a certificate of maturity, whether French or Swiss, may be matriculated in the universities of either country and may receive full credit for work done.

Commemorative Tablet to French Physicians Killed in Battle

At a meeting held December 9, the Academy of Medicine decided to erect a stele in the Hall of Fame in commemoration of the members of the medical corps who died on the battlefield. The execution of the stele will be entrusted to Dr. Paul Richer, professor in the School of Fine Arts and member of the Academy of Medicine.

Departure of the Canadian Red Cross

The Canadian Red Cross, which is about to withdraw from France, gave recently a farewell reception at which a representative of the undersecretary of the army medical corps, as well as M. Justin Godart, the former undersecretary, were present. Without counting the Canadian Hospital, which

has 520 beds and cost 2,000,000 francs, the Canadian Red Cross has turned over 2,000,000 francs to the French Red Cross and to various other welfare societies. A gift of 1,300,000 francs was also made to the president of the French republic in aid of the refugees, so that the Canadian Red Cross has expended in France a total sum of 30,550,646 francs.

Reeducation of Disabled Alsatians and Lorrainers

A decision has been reached that enlisted men and officers residing in Alsace or Lorraine who are suffering from disabilities arising from wounds and diseases contracted or aggravated during the war may secure admission to a special school of reeducation with a view to their being trained and placed in some industry or profession, provided they are of French origin or come within the category of persons permitted by the treaty of peace with Germany to be reclaimed as French nationals, and provided further that those requesting admission to such schools shall have reclaimed French nationality before making their request. The Landesfürsorgestelle für Kriegsinvaliden, which was created, June 3, 1915, under the German administration, has been transformed into the Institut des mutilés, réformés et veuves de guerre d'Alsace et de Lorraine, the purpose of which is to serve as a clearing house for information concerning the action of various administrative and private societies; to encourage and facilitate the reeducation of the disabled; to study into the regulations and legislative enactments that may be of advantage to certain persons interested, and, in a general way, to secure for such persons the help and support that they may need and are their due.

The Closing of a School of Reeducation

The School of Reeducation of Maison-Blanche, located in Neuilly-sur-Marne, department of the Seine-et-Oise, founded in July, 1916, by the Union des colonies étrangères en France en faveur des victimes de la guerre, has just closed its doors after more than three years of labor devoted to the reeducation of war cripples. During this period, this school reeducated more than 3,000 partially disabled men, preparing them for twenty or more different trades or professions. Positions were secured for a large number of these immediately on leaving the school. The funds for the support of this school, amounting to more than a million francs, were furnished entirely by a generous citizen of the United States, Edward T. Stotesbury of Philadelphia.

MEXICO CITY

Jan. 4, 1920.

Yellow Fever

Yellow fever is apparently spreading in this country, since a case has been reported at the port of Salina Cruz on the Pacific Coast far from Yucatan, the focus of the present epidemic. Dr. Noguchi has already begun his efforts to eradicate the disease, employing for this purpose his method of prophylactic vaccination by means of killed cultures of *Leptospira*. It is expected that this vaccine will give good results in view of the fact that yellow fever is one of those diseases that confer complete and permanent immunity and that the germ isolated by Dr. Noguchi is apparently the etiologic agent of this disease.

It is stated here that the sanitary authorities of Washington, having in mind the possibility of this disease spreading to the United States, have designated a commission composed of sanitarians and bacteriologists to come to this country and study the subject.

Noguchi has also presented to the Instituto Bacteriológico Nacional a dozen monkeys which will be utilized to carry out experiments on typhus fever (these animals being sensitive to the virus of this disease) and also to try the curative value which is claimed for a dog serum prepared here by inoculating dogs with the blood from typhus fever patients.

Death Due to Arsphenamin

A few days ago there happened in this town a death in a physician's office, caused by an injection with arsphenamin. The patient, about 24 years of age, was in the secondary stage of the disease with no apparent visceral lesions, and had a good physique. The injection was the third one, and German salvarsan was employed in doses of 30 cg. dissolved in 15 c.c. of distilled water without previous alkalization and being administered with a syringe. Respiratory symptoms occurred almost immediately, and the patient succumbed to acute dyspnea in about five minutes. Necropsy revealed a unilateral suppurating pyelitis and many enlarged blood vessels in both lungs, accompanied by embolisms of the same vessels. The two previous injections were administered at intervals of a week, in the same amount as the fatal one and with the same technic. In this case the death must be attributed to the defective technic and not to the drug, since it was obviously at fault in two respects, the acidity of the solution and the very small amount of the vehicle, which should have been at least 75 c.c. If no accident happened during the first injections, it may perhaps be attributed to the existence at the time of sufficient alkali reserve for the neutralization and redissolution of the arsphenamin.

Campaign Against Syphilis

The municipal council of the city of Puebla has adopted the proposal of Dr. Camarillo, who advocates that the municipal councils of the whole country should unite to formulate a program for a campaign against syphilis, to arrest contagion at its source. His plan is to treat energetically the contagious sores of prostitutes in the hospitals, so that these creatures may receive the benefit of modern arsenical medication. In Dr. Camarillo's opinion, it is criminal to isolate prostitutes and treat them only with mercury, since their lesions reappear afterward. He wants to have street-walkers properly cared for and forbid them to practice their profession, unless in addition to the lack of contagious lesions they give negative Wassermann reactions. For this purpose they will be compelled to have a sanitary card in which will be noted their sanitary condition from clinical and serologic standpoints.

Personal

During the year 1920 the position of mayor of the City of Mexico will be filled by Dr. Luis Coyula, former professor of physiology of the School of Medicine and a prominent journalist.

BUENOS AIRES

Nov. 25, 1919.

Anesthesia

The Association of Surgery has devoted several meetings to discussions on general anesthesia, the consensus being in favor of ether.

Thyroid Disorders

The Medical Society has devoted its special meetings this year to a study of hyperthyroidism and exophthalmic goiter. Drs. Lozano and Kraus discussed the first subject and Drs. Hardoy, Houssay, Escudero, Peralta Ramos and Dominguez the second.

Lecture on War Surgery

Dr. Pedro Chutro, who has just arrived from the United States, has given a series of lectures on war surgery in the School of Medicine.

Surgical Aeroplanes

Dr. Beretervide has declared that he intends to organize a service of aeroplanes to carry all the equipment necessary for surgical operations. In this way there can be performed any emergency operations that may be required in out of the way places.

Professorial Appointments

Dr. Pedro Chutro has been appointed professor of clinical surgery and Dr. B. A. Houssay professor of physiology in the School of Medicine of Buenos Aires. There has been approved the foundation of an institute of physiology which will include chairs of physiology, chemistry and biologic chemistry.

Marriages

ALBERT LEROY BROWN, Captain, M. C., U. S. Army, Douglas, Ariz.; to Miss Vlasta Coffey of Ellsworth, Kan., at Douglas, November 12.

FRED LOWE SOPER, Sao Paulo, Brazil, formerly of Chicago, to Miss Juliet Snider of Fort Scott, Kan., December 27.

ALFRED LEE LOOMIS BELL, Englewood, N. J., to Miss Grace Pauline Seidel of Philadelphia, January 1.

WILLIS CLARENCE KOOLS, Holland, Mich., to Miss Wilma Denabel, at Kalamazoo, in November.

CHAPIN CARPENTER, Wayne, Pa., to Miss Mary Ruth Smyth, at Pottsville, Pa., December 27.

ROBERT SHAFER, to Miss Ruth Hollis Taneyhill, both of Baltimore, December 27.

Deaths

Christian Rasmus Holmes, dean of the Medical Department of the University of Cincinnati, died in the Post-Graduate Hospital, New York City, January 9.

Dr. Holmes was born in Denmark, Oct. 18, 1857. His early education in Denmark and Germany was in civil engineering. On the death of his father he came with his mother to Cincinnati, beginning the study of medicine in the Miami Medical College, graduating in 1886. He became assistant to Dr. Joseph Aub, well known ophthalmologist of Cincinnati, and succeeded him in this specialty.

In 1892, Dr. Holmes became a member of the City Hospital staff. He appreciated the necessity of a city hospital worthy the name, and of the consolidation of the warring factions of the two chief medical colleges in the city. In the attainment of the first object, the establishment of an adequate general hospital in Cincinnati, he spent ten years of arduous labor in the hospitals of the United States and Europe. The result of these labors stands today as Dr. Holmes' greatest monument, the Cincinnati General Hospital. Dr. Holmes aided greatly in the consummation of the merger of the Medical College of Ohio and the Miami Medical College into the University of Cincinnati in 1909. The two colleges were made an integral part of the University of Cincinnati, with Dr. Holmes as dean of the new institution. In order to secure the union of the two colleges, Dr. Holmes helped in framing the charter which made the medical department of the hospital a part of the university whose trustees should have the sole right to elect the staff and supervise the nursing department.

Dr. Holmes was commissioned major, M. R. C., 1917, and placed in charge of the eye, ear, nose and throat department at the base hospital, Camp Sherman, Chillicothe, Ohio, where he remained until the end of hostilities.

Dr. Holmes was a prolific contributor to the literature regarding hospitals and their relation to medical education and to the literature of his specialty. He served as professor of otology in Miami Medical College from 1890 to 1904, as professor of ophthalmology in the Laura Memorial Medical College and Presbyterian Hospital from 1892 to 1903, and as professor of otology and dean of the University of Cincinnati since 1904. He was ophthalmologist and otologist to the Cincinnati Hospital from 1888 to 1899, and has been consulting ophthalmologist to the institution since 1908. He was third vice president of the American Medical Association in 1902-1903, chairman of the Section on Laryngology and Otology in 1904 and 1905, and of the Section on Ophthalmology in 1905-1906. He was president of the American Academy of Ophthalmology and Oto-Laryngology in 1901 and 1902, of the American Ophthalmological, Rhinological and Otological Society in 1908-1909, and of the Cincinnati Academy of Medicine.

Dr. Holmes was an idealist and enthusiast, and worked with untiring energy, sacrificing health and fortune to the accomplishment of the great plans which he had conceived.

Emery Marvel ⊕ Atlantic City, N. J.; second vice president of the American Medical Association; died January 8, after a surgical operation. Dr. Marvel was born in Dover, Del., in 1868, and received his medical degree from the University of Pennsylvania, Philadelphia, in 1895; he was a member of the American Association of Obstetricians and Gynecologists, and of the New York Academy of Medicine. Dr. Marvel made a specialty of surgery and was surgeon to the Atlantic City Hospital, consulting surgeon to the Jewish Seashore Home, and had been physician to St. Michael's Children's Hospital, Atlantic City. Dr. Marvel in addition to being vice president of the Association has been a member of the House of Delegates; he was always an active worker at the many annual sessions of the Association held in Atlantic City. Last year he was chairman of the committee of arrangements; those who were present at the session will testify to the splendid executive ability he displayed at that meeting.

Charles McIntire ⊕ Easton, Pa.; University of Pennsylvania, Philadelphia, 1883; aged 72; secretary of Northampton County Medical Society from 1878 to 1897 and president in 1900; president of the Lehigh Valley Medical Association in 1907; secretary of the American Academy of Medicine from 1891 to 1902, and from 1903 to 1915, president in 1902 and 1903, and treasurer since 1915; a specialist in ophthalmology; assistant in chemistry from 1868 to 1870, adjunct professor of chemistry from 1870 to 1874, and lecturer on sanitary science from 1880 to 1905, in Lafayette (Pa.) College; editor of the *Lehigh Valley Medical Association Journal* for several years, and of the *Bulletin of the American Academy of Medicine*, since 1896; died January 4.

Lorenzo P. Gibson ⊕ Little Rock, Ark.; Jefferson Medical College, 1877; aged 62; demonstrator of anatomy in the University of Arkansas from 1878 to 1903; acting assistant surgeon United States Marine Hospital Service since 1892; vice president of the American Medical Association, 1890-1891; president of the Arkansas Medical Society in 1895-1896; ex-president of the College of Physicians and Surgeons, Little Rock Medical Society and Pulaski County Medical Society; editor of the *Journal of the Arkansas Medical Society* for fifteen years; formerly secretary of the Arkansas State Board of Health; died December 29, from pneumonia.

Lucien F. Salomon, New Orleans; Tulane University, New Orleans, 1872; aged 69; a member of the Louisiana State Medical Association, a well known expert on yellow fever and typhoid fever; secretary of the Louisiana State Board of Health from 1886 to 1894; acting assistant surgeon U. S. Army in 1884 during the yellow fever epidemic; who investigated sanitary conditions in Jamica in 1885 and in Porto Rico in 1898 for the United States government; for two terms president of the New Orleans Medical and Surgical Association; died December 31, from heart disease.

William Edward Grant, Louisville, Ky.; Jefferson Medical College, 1886; Kentucky School of Medicine, Louisville, 1887; aged 74; a member of the Kentucky State Medical Association; health officer of the city of Louisville from 1909 to 1917; professor of medical life insurance and dean of the University of Louisville, Medical Department, from 1911 to 1914, and at the time of his death registrar of vital statistics for Jefferson County; died from angina pectoris, January 3.

Andrew Nelson Lerskov, Claremore, Okla.; University of Nashville, Tenn., 1907; aged 35; a member of the Oklahoma State Medical Association; formerly secretary of the Rogers County Medical Society and superintendent of health of Rogers County; First Lieutenant, M. R. C., U. S. Army, and honorably discharged Dec. 7, 1918; died in Kansas City, Mo., in November, from tuberculous peritonitis.

Charles S. Harle, Clifton, Ariz.; University of Louisville, Ky., 1892; aged 49; a member of the Arizona Medical Association; who practiced for several years in Chihuahua, Mexico, and spent ten years in prison, following his conviction for complicity in the murder of several men for their life insurance, and was afterward surgeon-general of Villa's armies, died in Abilene, Texas, December 30.

Warwick Miller Cowgill ⊕ Lincoln, Neb.; University of Louisville, Ky., 1883; aged 62; who limited his practice exclusively to diseases of the eye, ear, nose and throat; for many years ophthalmic and aural surgeon for the Louisville and Memphis divisions of the Illinois Central System, at Paducah, Ky.; died in St. Elizabeth's Hospital, Lincoln, December 29, from nephritis.

Neidhard Hahnemann Houghton ⊕ Boston; New York Homeopathic Medical College, New York City, 1887; aged 58; associate professor of diseases of the nose and throat in the medical department of Boston University; died in the Massachusetts Homeopathic Hospital, Boston, December 26, from injuries received when struck by a streetcar in Brookline, a short time before.

John F. Glover, Evansville, Ind.; University of Illinois, Chicago, 1888; aged 64; a member of the Indiana State Medical Association; for many years assistant superintendent of the Southern Indiana Hospital for the Insane, Woodmere, Evansville, and secretary of the Evansville Board of Health; died December 28, in the Walker Hospital, Evansville, from heart disease.

William Harold Townsend ⊕ Sac City, Iowa; State University of Iowa, Iowa City, 1897; aged 50; assistant surgeon of the Fifty-Second Iowa Infantry, U. S. V., during the war with Spain; once mayor of Sac City and for sixteen years coroner of Sac County; died December 24 from carcinoma.

Thomas Estill Holland ⊕ Hot Springs, Ark.; Missouri Medical College, St. Louis, 1874; aged 70; formerly president of the Medical Association of the Southwest; formerly Lieut.-Col., M. C., Mo. N. G.; a member of the staff of the Ozark Sanitarium; died December 21.

John D. Cope, Negley, Ohio; American Eclectic Medical College, Cincinnati, 1882; aged 70; was thrown from his

⊕ Indicates "Fellow" of the American Medical Association.

buggy in a runaway accident near his home, December 22, sustaining a fracture of the skull and other injuries from which he died ten hours later.

Oliver Tracy Logan, Changteh, Hunan, China; Medical College of Indiana, Indianapolis, 1895; aged 49; for twenty-three years a medical missionary of the Presbyterian Board in China; died December 7 in China as the result of an accidental gunshot wound.

Willard Clyde Foster ✠ Casper, Wyo.; University of Minnesota, Minneapolis, 1902; aged 42; formerly local surgeon of the Colorado Fuel and Iron Company and the Colorado Midland Railway at Gulch, Colo.; was killed in an automobile accident, recently.

Edward C. Ellerbrock, St. Louis; Homeopathic Medical College of Missouri, St. Louis, 1896; St. Louis College of Physicians and Surgeons, 1902; aged 64; died in the St. Louis City Hospital, December 25, from accidental poisoning by bichloride of mercury.

Benjamin Franklin Archer, Sweet Water, Texas; Tulane University, New Orleans, 1861; aged 85; surgeon of a Mississippi regiment in the Confederate service during the Civil War; representative in the state legislature from 1872 to 1874; died December 14.

Elva A. Cram, Great Falls, Mont.; Kentucky School of Medicine, Louisville, 1903; aged 42; a member of the Kentucky State Medical Association and for several years a practitioner of Peach Grove, Ky., died December 26, from pulmonary tuberculosis.

Mary Caroline Hollister, Chicago; Northwestern University Woman's Medical School, Chicago, 1882; aged 59; a member of the Illinois State Medical Society; a specialist on diseases of the eye and ear; died at her winter home, Lake Worth, Fla., January 2.

Walter Ralie Francis, Bowling Green, Ky.; Cincinnati College of Medicine and Surgery, 1881; aged 63; a member of the Kentucky State Medical Association; died in St. Joseph's Hospital, Bowling Green, December 24, from pneumonia.

Marcus H. White, Roseburg, Ore.; Keokuk, Iowa, Medical College, 1891; aged 76; a veteran of the Civil War; for twenty-five years a practitioner of Portland; died at the Oregon Soldiers' Home, Roseburg, October 23, from paralysis agitans.

Robert M. Foster ✠ Russellville, Ind.; Kentucky School of Medicine, Louisville, 1903; aged 48; died in the L. L. Culver Union Hospital, Crawfordsville, Ind., December 29, from peritonitis two weeks after an operation for appendicitis.

Corydon S. McClain, Springfield, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1870; aged 76; formerly one of the editors of the *Springfield Advertiser;* was found dead, December 22, from gas asphyxiation.

Benjamin Davis, New Carlisle, Ohio; Medical College of Indiana, Indianapolis, 1879; aged 73; president of the Clark County Health Board; died at the home of his daughter in Osborn, Ohio, December 23, from heart disease.

Peter C. Guinan, Rochester, N. Y.; University of Buffalo, N. Y., 1887; aged 64; a member of the Medical Society of the State of New York; died in the Rochester General Hospital, January 4, from cerebral hemorrhage.

James Pittman, Cincinnati, Ark.; St. Louis College of Physicians and Surgeons, 1898; aged 48; a member of the Arkansas Medical Society; died in the City Hospital, Fayetteville, Ark., December 18, from appendicitis.

Joseph William Little, Washington, D. C.; George Washington University, Washington, D. C., 1872; aged 76; a member of the Medical Society of the District of Columbia; died December 28, from myocarditis.

Cephas L. Carroll, Taylorville, Ill.; Detroit Medical College, 1870; aged 83; died in St. Vincent's Hospital, Taylorville, December 26, a few hours after an operation for the removal of stones of the bladder.

Rachael Swain, Indianapolis; Northwestern University Woman's Medical School, Chicago, 1882; aged 80; who had been spending the winter in Long Beach, Calif., died December 31.

Benjamin Griffiths Beddoe ✠ Scranton, Pa.; Jefferson Medical College, 1890; aged 64; a member of the staff of the West Side Hospital, Scranton; died December 24, from pneumonia.

Harry J. Garber, Essexville, Mich.; Homeopathic Hospital College, Cleveland, 1889; aged 53; died in Grace Hospital, Detroit, December 17, from carcinoma of the esophagus.

William Rutherford Young ✠ Long Beach, Calif.; State University of Iowa, 1893; aged 51; for many years a practitioner of Ansley, Neb.; died December 22, from heart disease.

Edmund Gerrish Dearborn, Antrim, N. H.; Harvard Medical School, 1904; aged 40; a member of the New Hampshire Medical Society; died in Nashua N. H., November 30.

Martin F. Moore ✠ Ottumwa, Iowa; Keokuk, Iowa, Medical College, 1898; aged 44; died December 27, at the Ottumwa Hospital from heart disease, after a sinus operation.

John Thomas Strode, Maysville, Ky.; Jefferson Medical College, 1862; Pulte Medical College, Cincinnati, 1879; aged 81; died December 24 from cerebral hemorrhage.

Walter Louis Havens, Chester Depot, Vt.; College of Physicians and Surgeons in the City of New York, 1885; aged 58; died December 7, from tuberculosis.

Paris Garner Clark, Unadilla, N. Y.; Bellevue Hospital Medical College, 1868; aged 74; for many years a member of the local school board; died December 21.

William A. Brown, Louisville, Ky.; Meharry Medical College, Nashville, Tenn., 1892; aged 58; a colored practitioner; died October 19, from cirrhosis of the liver.

James L. Holden, Zanesville, Ohio; Medical College of Ohio, Cincinnati, 1882; aged 61; mayor of Zanesville in 1901 and 1902; died December 20, from nephritis.

Duane P. Andrus, St. Louis; American Medical College, Eclectic, St. Louis, 1883; aged 69; was found dead in his room, December 16, from gas asphyxiation.

Marion Cooper Geiger, Polytechnic, Texas; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1881; aged 66; died December 26, from heart disease.

Ella Ridgway Ziegler ✠ Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1874; aged 74; died December 30, from cerebral hemorrhage.

Thomas M. Dromgold, Ottawa, Ill.; Eclectic Medical Institute, Cincinnati, 1878; aged 71; in Ryburn Hospital, Ottawa, December 21, from cerebral hemorrhage.

William Delay ✠ Rome, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1881; died at Selma, Ala., December 7, from cerebral hemorrhage.

Levi N. Smith, Western, Neb.; Kentucky School of Medicine, Louisville, Ky., 1881; aged 65; died December 19, as the result of an automobile accident.

Davis A. Hogue ✠ Altoona, Pa.; Jefferson Medical College, 1875; aged 65; died in Mercy Hospital, Altoona, December 18, from pulmonary embolism.

John Franklin Bradshaw, Lincoln, Neb.; Rush Medical College, 1879; aged 63; also a druggist; died December 19, from gangrene of the lungs.

Helen Grant Winn Zimdars, San Francisco; Cooper Medical College, San Francisco, 1897; aged 50; died December 25, from angina pectoris.

William E. Robinson, Rapid City, S. D.; Louisville (Ky.) Medical College, 1894; aged 48; died December 3, from pulmonary tuberculosis.

Sylvester Bronson Moon, Wilmington, Ohio; Miami Medical College, Cincinnati, 1872; aged 84; died December 21, from senile debility.

Andrew P. Davis, Los Angeles; Rush Medical College, 1867; Pulte Medical College, Cincinnati, 1877; aged 84; died December 19.

John F. Finley, Palmyra, Ind. (license, Indiana, 1897); aged 72; a practitioner for forty years; died December 25, from heart disease.

Stanley Wheelock, Quincy, Ill.; Kentucky School of Medicine, Louisville, 1893; aged 48; died November 22, from endocarditis.

Elisha J. Graham, Hodgenville, Ky.; University of Louisville, Ky., 1866; aged 80; a veteran of the Civil War; died December 24.

T. F. Donaldson, Knoxville, Tenn. (license, Tennessee, 1889); aged 70; died December 15 from pulmonary hemorrhage.

John Loomis, Jeffersonville, Ind. (license, Indiana, 1897); aged 99; a practitioner since 1860; died December 22.

David Norwood, Esperance, N. Y.; Albany (N. Y.) Medical College, 1867; aged 86; died November 24.

Jeremiah Roberts, Holton, Ind. (license, Indiana, 1897); aged 81; died November 19.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

SINGLETON'S EYE OINTMENT AND OTHER NOSTRUMS

The letter quoted below, from a layman in Oregon, is typical of those received by the Propaganda department from the general public. It is reproduced and answered because, in the answering, certain facts may be brought out that may be of interest to the medical profession.

"In looking over and re-reading your valuable work 'Nostrums and Quackery' I see no mention made of the alleged three-hundred-year-old British eye remedy, 'Singleton's Eye Ointment' nor 'Congreve's Elixir for Consumption.' Neither is the analysis of Swift's S. S. S. Remedy given nor 'Absorbine'; not a word about the remedies of Dr. Miles of Elkhart—his 'Nervine,' 'Anti-Pain Pills' and 'Heart Cure'; nor the 'Dr. Blosser Catarrh Remedy Company' of Atlanta, Ga. I should like to know the composition of the above mentioned remedies.

"How much I would like to see you organize a great campaign and print large bills exposing these frauds and have them on bill-boards in cities and your information distributed in form of pamphlets from house to house.

"In 'Nostrums and Quackery' you do not mention the 'Enk Tissue Remedies' nor 'Bon Opto' for the eyes. What is the composition of 'Tanlac' put up by the Cooper Medicine Company and 'Yellow Minyol' for the scalp put out by the Blackburn Products Company"

"Singleton's Eye Ointment" is not dealt with in "Nostrums and Quackery" because the stuff has but a limited sale in the United States; it is a British nostrum. It was analyzed by the chemists of the British Medical Association in 1909 who reported it to be essentially a mixture of lard, Japan wax and purified cocoanut oil with 4 per cent. of beeswax and 7.4 per cent. of red mercuric oxid. This analysis is recorded in Street's book "The Composition of Certain Patent and Proprietary Medicines"[1] published by the American Medical Association. "Congreve's Elixir for Consumption" was also omitted from "Nostrums and Quackery" because the stuff is sold almost entirely in the British Isles or British possessions. It, too, has been analyzed by the chemists of the British Medical Association, who reported the presence of over 28 per cent. of alcohol by volume with only 2.6 per cent. of total solids, of which about 1 per cent. was sugar and 0.5 per cent. resinous constituents, with a little tannin, coloring matter and extractives. This formula also is given in Street's book.

"S. S. S." or "Swift's Sure Specific" is not discussed in "Nostrums and Quackery" (which came from the press in January, 1913) but is dealt with in more recent publications. An article on the product will be found in the pamphlet "Miscellaneous Nostrums."[2] In the same pamphlet will be found articles on "Absorbine," "Miles' Heart Treatment" (with incidental mention of "Miles' Anti-Pain Pills") "Bon Opto" and "Tanlac." "Miles' Nervine" is the subject of an article in the pamphlet "Epilepsy Cures,"[3] while the composition of "Yellow Minyol" as found by the chemists of the Connecticut Agricultural Experiment Station is given in the pamphlet "Cosmetic Nostrums"[4] also published by the Association.

The Blosser concern was dealt with by Mr. Adams in his "Great American Fraud"[4] series (reprinted by the Association); the report of the North Dakota state chemists to the effect that this "catarrh remedy" is a mixture of chamomile flowers, aniseed, cubeb and pepper, is briefly quoted in Street's book.

The "Enk Tissue Remedies," while on record in the files of the Propaganda department, have seemed to constitute too insignificant a piece of quackery to warrant the preparation of any article on them. While the Association does not have large posters on the bill-boards exposing the nostrum evil, it does have on sale educational posters on the subject and these are used to no small extent by individuals and organizations interested in bringing home to the public the menace of the nostrum. While, too, the Association does not distribute its pamphlets on the nostrum evil and quackery from house to house, nevertheless, in the past few years over a million pamphlets and books dealing with this subject have been put in the hands of the public.

1. Street, J. P.: The Composition of Certain Patent and Proprietary Medicines, Chicago, American Medical Association, price $1.25 postpaid.
2. Miscellaneous Nostrums: Chicago, Am. Med. Assn., price 20 cents.
3. Epilepsy Cures: Chicago, Am. Med. Assn., price 10 cents.
4. Adams, S. H.: Great American Fraud, Chicago, Am. Med. Assn., price 25 cents.

KLINE'S NERVE RESTORATIVE

A physician in South Carolina, writes:

"I am anxious to learn the chemical composition or formula of 'Kline's Nerve Restorative'; also its therapeutic properties, if any. I was consulted recently by a patient regarding the preparation and, unfortunately, could only inform the patient—to quote a recent and very pertinent editorial in a most valuable medical journal—that possibly it was a preparation 'founded on 5 per cent. banalities of elementary science and 95 per cent. of pseudo-scientific flapdoodle,' and was not noted for any special therapeutic properties."

"Kline's Nerve Remedy" is one of a group of alleged epilepsy cures investigated by the Propaganda department and analyzed by the A. M. A. Chemical Laboratory in 1915. At that time it was reported, of the Kline nostrum, that: "Essentially, each 100 c.c. of the solution contains approximately 8.7 gm. ammonium bromid, 9.2 gm. potassium bromid and 8.0 gm. sodium bromid. Calculating from the bromid determinations each meal-time dose, one teaspoonful (1 fluidram), contains the equivalent of 17.2 grains potassium bromid, and each daily dose (5 teaspoonfuls) corresponds to 87.0 grains potassium bromid." The article on Kline's remedy, as well as the articles on other so-called epilepsy cures, have been brought together in one pamphlet ("Epilepsy Cures," price 10 cents) prepared and issued by the Propaganda department of THE JOURNAL.

Correspondence

MEDICAL VETERANS OF THE WORLD WAR

An Appeal to Medical Members of Selective Service Boards

To the Editor:—Immediately on the termination of hostilities in November, 1918, members of the medical profession on active service in Washington recognized the need of an organization to perpetuate the principles and fellowships developed during the war. A committee was therefore formed, which was representative of those governmental services—including the Provost Marshal General's Office—which were directly associated with the selection and administration of the armed forces of the United States. This committee formulated a constitution and by-laws which were adopted by the newly formed society at its first annual meeting, held at Atlantic City in June, 1919, in connection with the meeting of the American Medical Association. The society was tentatively named the Medical Veterans of the World War.

The qualifications set forth in the constitution provide that, in addition to men of the military, naval and public health services, the following are eligible to membership, namely, all medical members and medical examiners of Local, Medical Advisory and District Boards, officially appointed by the President of the United States, the Provost Marshal General, or the governors of the various states; also, additional examining physicians who were appointed by the President of a Local or Medical Advisory Board and vouched for by the medical aide to the governor.

When the armistice became effective, there were about 25,000 physicians who were associated with the operations of the Selective Service, in one or other of the capacities just cited. The personal and official relationships formed in

their activities were of so binding a character that medical men thus engaged were conscious of a strong bond of fellowship. It would be a great pity if the fine sentiments and comradeships engendered by the work should cease to be, through lack of opportunity for their continued expression. The society of Medical Veterans of the World War fills the need ideally, and it is felt that all medical men who were associated in the great and eminently successful work of the Selective Service should identify themselves with this organization.

The next annual meeting of the society will be held at New Orleans, April 27, the first day of the meeting of the American Medical Association. The dues are negligible—only one dollar with the application. The secretary-treasurer is Col. F. F. Russell, M. C., U. S. Army, Army Medical School, Washington, D. C. The president is Dr. Victor C. Vaughan, Ann Arbor, Mich.; the vice president is Admiral Stitt, and the trustees are Col. F. A. Winter and Drs. James C. Perry, John M. Dodson, George E. Brewer, Hubert Work and Joel E. Goldthwait.

F. R. KEEFER, M.D., Carlisle, Pa.
Colonel, M. C., U. S. Army; Late Chief, Medical Division, Provost Marshal General's Office.

[COMMENT.—According to the report of Col. F. F. Russell, secretary, on December 1 there were 2,399 members of the Medical Veterans of the World War, distributed as follows:

1. Medical Corps, U. S. Army	1,019
2. Medical Corps, U. S. Navy	41
3. Medical Corps, U. S. P. H. S.	57
4. Contract Surgeons, U. S. Army	81
5. Acting Asst. Surgeons, U. S. P. H. S.	43
6. Local Boards	491
7. Medical Examiner, Local Board	162
8. Medical Advisory Board	505
Total	2,399

The insignia which the badge committee has reported on is now being manufactured, and will be ready for distribution to the members within a short time.—ED.].

"Medical Veterans of the World War" Offers Opportunity for Constructive Work

To the Editor:—Would that the letter of the Surgeon-General of the Army (THE JOURNAL, Jan. 10, 1920) might be placed in the hands of every medical officer who served in the Medical Reserve Corps.

The Surgeon-General has struck at the very crux of the matter: Instead of criticism and fault finding, what is needed is united support to prevent a recurrence of much of the inefficiency of which many of us were witnesses. You cannot make an army medical officer out of a civilian practitioner over night. If we suffered from unpreparedness, we have no one to blame but ourselves. It is our duty to see that it does not recur. This can be accomplished only through education, not through carping criticism. We all have our story to tell of those under us—and by those over us. I, who served as a divisional instructor, might add much which would not appear complimentary, but such observations would profit little unless constructive in character.

The skilful operator who may have filled an important chair in a teaching institution or a medical internist of equal reputation may utterly fail in rendering efficient service in the field. Other qualifications in addition are necessary to produce an efficient army officer. The failure on the part of many to realize this phase of the situation was the cause of much heart burning. The time has come to cease complaining and to join hands in upholding the efforts which that small body of medical officers of the regular Army tried to exert in attempting to overcome a condition well nigh unsurmountable (450 medical officers for an army of 2,000,000 men). Those of us conversant with the conditions which then existed realize that in no better way can we aid in preventing a recurrence than in supporting whole heartedly the efforts of those who wish to make the organization of the Medical Veterans of the World War a powerful force in preparing for any future emergency.

JOSEPH LEIDY, M.D., Philadelphia.

"ALLEGED PLACENTAL FUNCTIONS"

To the Editor:—The communication from Dr. Robert T. Frank (THE JOURNAL, Jan. 3, 1920, p. 47) contains some misconceptions of my interpretations of the results of the work that has been done in the studies directed toward ascertaining whether or not the placenta can be classified among the glands of internal secretion, as published in *Endocrinology* (**3**: 307 [July-Sept.] 1919). This article was merely intended as a review of the work to date in as brief a manner as possible. It was therein distinctly stated that "a retrospective analysis of the work undertaken, however, reveals four fairly distinct nuclei of attention," and a discussion was made of these four fields of effort, namely: (1) the possibility that the placenta produces an internal secretion concerned in eclampsia; (2) the possibility that the placenta produces an internal secretion effecting the mammary hyperplasia of pregnancy; (3) the possible galactogogic activity of the placenta, and (4) placental products considered as stimuli to growth. Each one of these phases of possible function was taken up seriatim and individually, and the statement that I have fallen into the error of not differentiating between hyperplasia or galactogogic stimuli or processes indicates a misreading of what I said, as any one can verify by reading the original article. Moreover, a wrong impression is given, as frequently happens when partial quotations are made. That I definitely assigned a finality to the bedside observations is implied by the quotation given by Dr. Frank. If he had quoted the following sentence, this implication would not have seen print. The next sentence is as follows:

> It is of course obvious that we are here dealing with a condition much different from that occurring during pregnancy and that the negative results may mean little or nothing as evidence toward the part played by the placenta in *pregnancy hyperplasia;* nevertheless, the validity of the interpretation is on a par, *until disproved,* with that given from the work on virgin animals.

As to the effect of the ingestion of desiccated placenta on the growth of breast-fed infants, the observations of Van Hoosen, Cornell, and McNeile and myself have yet to be disqualified by experimental work.

Now as to my reading into the results that the placenta *does of a fact* produce an intra-uterine growth-promoting hormone: Such was neither my intention nor my aim. The statement that "it is not illogical to suppose that the placenta in utero produces a substance acting as a stimulus to fetal growth" should to any thoughtful reader convey what it was intended for, the idea, purely speculative, that such a possibility might exist, and pointing out a possible field of investigation. Its intention should be particularly obvious, since I did not make any references to any work that had been carried on tending to throw light on the possibility.

FREDERICK S. HAMMETT, PH.D., Philadelphia.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

GLUE FOR TRACTION IN FRACTURES

To the Editor:—Please inform me concerning Sinclair's formula for a glue for traction in fractures.

W. E. WHALEN, M.D., Ogden, Utah.

ANSWER.—According to Sinclair's formula, 4 ounces of glue are placed in 4 pounds of cold water and left in a cool place for twelve hours. If the glue dissolves, it is bad; if it is coherent and gelatinous, weighing 8 ounces, it is good; if coherent and gelatinous, weighing 16 ounces, it is very good; if coherent and gelatinous, weighing 20 ounces, it is excellent. Fifty parts of good glue are soaked for twelve hours in water, 50 parts; glycerin, 4 or 6 parts, and menthol, 1 part, and then melted on a water bath. After neutralizing to litmus with sodium hydroxid, as commercial glue at times contains free hydrochloric acid, there are added 4 parts in summer and 5 parts in winter of glycerin and 1 part of

menthol. Frequent heating evaporates the water, which should be added from time to time. When reheated many times, adhesive power is lost. The technic is as follows:

1. The skin is not shaved.
2. Wash the skin with soap and hot water which contains about 4 drams of washing soda to the pint, to convert the oil of the skin into soap, as glue will not adhere to a greasy surface.
3. Dry the skin.
4. Apply the warm glue evenly, brushing all the hairs of the limb in an upward direction.
5. Keep a tension on the gauze all the time; bring it quickly but carefully into contact with the limb (inner and outer surface), and apply neatly a loose woven bandage, starting a hand's breadth above the malleoli up to the joint.
6. When dry, apply traction.

(The adhesive can be made waterproof with a 2 per cent. solution of potassium bichromate applied in the dark and then exposed to the light, or by means of liquor formaldehydi.)

7. The extension must always be applied very carefully, whether with Maw's elastic cotton net or with gauze.
8. The extension must be changed at once if the patient complains of a tickling or burning sensation under it, but it generally requires changing about the tenth, twentieth or fourtieth day.

In THE JOURNAL, Sept. 27, 1919, p. 973, Dr. W. F. Cunningham describes a new adhesive material for this purpose, which he believes superior to the Sinclair formula. It consists of a solution of celloidin in acetone, which is prepared as follows:

The required amount of celluloid scrap and acetone are placed in a *dry*, clean, wide-mouthed bottle and securely stoppered. The bottle is then shaken or agitated at intervals, and the solution is ready for use in from twenty-four to forty-eight hours. When properly made, it should be an almost clear, homogeneous, syrupy fluid.

In the experiments, no careful preparation of the skin was made. It should, however, be absolutely dry; and the preliminary use of a few cubic centimeters of acetone on the region to be employed may aid in this respect, but is not necessary. A layer of celluloid solution is rapidly applied by means of a small, stiff brush. The quantity should be sufficient to soak through the strip on which traction is to be applied, and a thin coating should be applied externally to get out all the wrinkles and air bubbles. Canton flannel is the best material for strips, but a double layer of gauze or muslin that is neither too hard nor too finely woven may be used.

Iodin and also picric acid and alcohol should be avoided as far as possible on areas to which any type of adhesive is to be applied. Both these drugs increase exfoliation, and we well know the reaction of certain skins to the former. We believe, with Sinclair, that the part should not be shaved before adhesive material is applied, for the hairs, if abundant, increase the efficiency of the adhesive, like hair in plaster. If there is delay in putting on the strip, the skin should be recoated, for it dries out in a thin, flexible film in a minute or two. The application of a circular gauze bandage over cotton increases the effectiveness of adhesion and should be used. It is needless to state that the solution is combustible; therefore it should not be heated, and containers should be so labeled.

COMPARATIVE FOOD VALUES OF BUTTER AND OTHER FATS

To the Editor:—Can you give a comparison in food values and in digestibility of cocomargarine; olive oil and oleomargarine as compared with butter? With present prices for real butter, many are compelled to seek substitutes which may or may not be more economical.

J. TRACY MELVIN, M.D., Porterville, Calif.

ANSWER.—The heat values of butter and other fats are fairly constant; the values given are: for butter fat, 9.312; for fat of animal tissue, 9.372, and olive oil, 9.384 calories per gram. The nutritional value of a food is, however, also determined by the presence or absence of certain vitamins, as for instance, fat-soluble A, normally present in butter. The fat-soluble accessory growth substance is present in beef fat and "oleo-oil," and margarins prepared on such a basis are probably the nutritive equivalent of butter. Coconut oil, cottonseed oil, peanut oil, olive oil, and nut and vegetable oils in general contain little or none of this accessory substance, and margarins prepared from these are not the nutritive equivalent of butter. With allowance for metabolic products, the coefficients of digestibility have been found to be: for butter fat, 97 per cent.; for beef fat, 93; for olive oil, 97.8, and for coconut oil, 97.9 per cent.

For more complete details the following contributions may be consulted:

A Problem Concerning Edible Fats, editorial, THE JOURNAL, Dec. 1, 1917, p. 1876.
The Digestibility of Nut Oils, editorial, THE JOURNAL, Aug. 10, 1918, p. 467.
Langworthy C. G., and Holmes, A. D.: Digestibility of Some Animal Fats, U. S. Dept. Agric. Bull. 310, Nov. 9, 1915; Digestibility of Some Vegetable Fats, U. S. Dept. Agric. Bull 505, Feb. 13, 1917.
Halliburton, W. D., and Drummond, J. C.: The Nutritive Value of Margarines and Butter Substitutes, *J. Physiol.* **51**: 235, 1917.
Lusk, Graham: The Elements of the Science of Nutrition, Ed. 3, Philadelphia, W. B. Saunders Company, 1917.

LITERATURE ON NITROUS OXID-OXYGEN ANESTHESIA

To the Editor:—I am desirous of obtaining all the literature in the past two years (American) on general anesthesia with nitrous oxid and oxygen.

V. D. THOMAS, M.D., Bloomington, Ill.

ANSWER.—In the Quarterly Cumulative Index for 1918, under the heading "Anesthesia," appear the following references:

Nitrous oxid analgesia in obstetrics (J. C. Hoag) *Illinois M. J.* **33**: 324 (April) 1918.
—in labor (L. C. Redmon) *Kentucky M. J.* **16**: 499 (Nov.) 1918.
—in production of painless childbirth (M. Salzer) *Ohio State M. J.* **14**: 406 (July) 1918.
—new inhaler for (A. H. Miller) J. A. M. A. **71**: 109 (July 13) 1918.
—on possibility of mixing air in lungs with foreign air, especially as it is used in Krogh and Lindhard's nitrous oxid method (C. Sonne) *J. Physiol.* **52**: 75 (July) 1918.
Nitrous oxid-oxygen, comparative dangers and availability of (J. R. McCurdy) *Am. J. S.* (anesthesia supp.) **32**: 19 (Jan.) 1918.
—and anaesthol sequence in oral surgery (C. H. Sanford) *Ann. Surg.* **67**: 462 (April) 1918.
—changes produced in blood by nitrous oxid-oxygen anesthesia (T. D. Casto) *Am. J. S.* (anesthesia supp.) **32**: 42 (April) 1918.
—in labor (C. E. Turner and W. I. Jones) *Am. J. S.* (anesthesia supp.) **32**: 52 (April) 1918.
—in obstetrics (C. S. Fleming) *W. Va. M. J.* **12**: 246 (Jan.) 1918.
—simple apparatus for (A. S. Wilson) *Brit. M. J.* **1**: 78 (Jan. 19) 1918.
Nitrous oxygen, experimental researches in warming of nitrous oxygen for anesthesia (P. Cassidy) *Am. J. S.* (anesthesia supp.) **32**: 46 (April) 1918.

In the issue for January-September, 1919, under the same heading, appear:

Nitrous oxid analgesia in labor (R. C. Coburn) *New York State J. Med.* **19**: 37 (Feb.) 1919.
—in labor (R. S. Allison) *Northwest Med.* **18**: 9 (Jan.) 1919.
Nitrous oxid-oxygen analgesia in obstetrics (A. L. Smith) *Nebraska M. J.* **4**: 54, 1919.
—cesarean section and obstetric observation under nitrous oxid-oxygen (E. I. McKesson) *Am. J. Surg.* (anesthesia supp.) **33**: 84 (July) 1919.
—for cesarean section and obstetric operations (E. I. McKesson) *Ohio State M. J.* **15**: 422 (July) 1919.
—for difficult extractions (H. R. Francis) *Am. J. Surg.* (anesthesia supp.) **33**: 56 (April) 1919.
—in combination with ether or C. E. mixture for nose and throat operations (H. E. G. Boyle) *Brit. M. J.* **2**: 684 (Dec. 21) 1918.
—in major surgery (F. K. Camp) *Southwest J. Med. & Surg.* **27**: 49 (March) 1919.
—in normal labor and operative obstetrics (W. C. Danforth) *Am. J. Surg.* (anesthesia supp.) **33**: 5 (Jan.) 1919.
—in obstetric operations and cesarean section (E. L. McKesson) *J. Indiana M. A.* **12**: 8 (Jan.) 1919.
—some observations on limitations of nitrous oxid-oxygen anesthesia and a restraining device for obstreperous patients (W. F. Dramburg) *Am. J. Surg.* (anesthesia supp.) **33**: 78 (July) 1919.
—Study of blood pressure changes during (W. B. Davis and W. H. Spencer) *Therap. Gaz.* **43**: 82 (Feb.) 1919.

RESTORATION OF MENSTRUAL FUNCTION LOST AFTER RADIUM TREATMENT

To the Editor:—Can you give me any treatment for the restoration of the menstrual function in a young person after it has been partially stopped for a year from radium treatment, or inform me of literature on the subject?

J. A. VALENTA, M.D., Lake City, Iowa.

ANSWER.—In articles on the treatment of uterine fibroids or menorrhagia by radium it has been noted that many patients, after a cessation of menstruation from nine months to two years, begin spontaneously to menstruate again. This may occur even after the third year. It also seems likely that the giving of corpus luteum alone or in combination with hypophysis extract (pituitary solution) can hasten the return. If, however, the original radiation has been intense enough to destroy all the primordial follicles of the ovary, no return of menstruation can be expected.

A Swedish View of the Council on Pharmacy and Chemistry.—The leading, in fact, the only article in *Hygiea*, Oct. 16, 1919, is an account by Anderson-Tesch of his five months in the United States as delegate sent by the Association of Swedish Manufacturing Chemists to study the chemical industry in America and its development during the war. Incidentally he was much impressed with the medical institutions of this country, as he relates with minute detail, especially the way in which the physical examination of the recruits was managed and recorded. He devotes several pages to describing in detail the work of the Council on Pharmacy and Chemistry which, he says, is "undoubtedly the most energetic and well planned work for control of non-official remedies. It was realized by the initiative of the American Medical Association, America's largest and most esteemed medical association."

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alaska: Juneau, Mar. 2. Sec., Dr. L. O. Sloan, Juneau.

California: Los Angeles, Feb. 16-19. Sec., Dr. Chas. B. Pinkham, 906 Forum Bldg., Sacramento.

Illinois: Chicago, Mar. 1-3. Director, Mr. Francis W. Shepardson, Springfield.

Indiana: Indianapolis, Feb. 10-13. Sec., Dr. W. I. Gott, 84 State House, Indianapolis.

Kansas: Topeka, Feb. 10. Sec., Dr. H. A. Dykes, Lebanon.

National Board of Medical Examiners: St. Louis and Chicago, Feb. 18-25. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia, Pa.

New York: New York City, Albany, Buffalo, Jan. 27-31. Asst. Professional Examinations, Mr. H. J. Hamilton, Albany.

Vermont: Burlington, Feb. 10-12. Sec., Dr. W. Scott Nay, Underhill.

Wyoming: Thermopolis, Feb. 2-4. Sec., Dr. J. D. Shingle, Cheyenne.

ANNUAL CONFERENCE ON MEDICAL EDUCATION AND LICENSURE

The next conference on medical education and licensure will be held, March 1, 2 and 3, at the Congress Hotel, Chicago, under the auspices of the Council on Medical Education of the American Medical Association, the Association of American Medical Colleges, and the Federation of State Medical Boards of the United States. Instead of the three separate disjointed programs heretofore held, there will be a single program by which conflicts and duplications will be avoided, papers will be more carefully selected, and discussions will be more effectively directed. The program as now arranged is as follows:

Introductory Remarks by Dr. Arthur Dean Bevan, chairman of the Council on Medical Education; Dr. George Blumer, president of the Association of American Medical Colleges, and Dr. David A. Strickler, president of the Federation of State Medical Boards.

"Present Status of Medical Education," Dr. N. P. Colwell, secretary of the Council on Medical Education.

Symposium on "The Needs and Future of Medical Education," Dr. George E. Vincent, president of the Rockefeller Foundation, New York. The following also have been invited: Dr. Ray Lyman Wilbur, president of Leland Stanford University. Dr. Henry S. Pritchett, president Carnegie Foundation for the Advancement of Teaching, New York. Dr. Harry Pratt Judson, president University of Chicago. Mr. Abraham Flexner, secretary of the General Education Board, New York.

"The Larger Function of State University Medical Schools," Dr. Walter A. Jessup, president of the State University of Iowa, Iowa City.

"Full-Time Teachers in Clinical Departments," Dr. William Darrach, dean of Columbia University College of Physicians and Surgeons, New York.

"Research in Medical Schools, Laboratory Departments," Dr. Oskar Klotz, professor of pathology, University of Pittsburgh School of Medicine.

"Research in Medical Schools, Clinical Departments," Dr. G. Canby Robinson, dean, Washington University School of Medicine, St. Louis.

"Graduate Medical Instruction in the United States," Dr. Louis B. Wilson, Mayo Clinic, Rochester, Minn.

"Interallied Medical Relations; Qualifying Examinations, Licensure Requirements, Graduate Medical Education," Dr. Walter L. Bierring, secretary of the Federation of State Medical Boards, Des Moines, Iowa.

"Interstate Relations in Medical Licensure," Francis W. Shepardson, director of the Department of Education and Registration of the State of Illinois, Springfield.

"Essential Improvements in Medical Licensure," Dr. John M. Baldy, president of the Pennsylvania Bureau of Medical Education and Licensure, Philadelphia.

Reports on Medical Teaching from the Committee on Medical Pedagogy of the Association of American Medical Colleges.

Remarks by the chairman of the committee, Dr. W. S. Carter, dean, University of Texas, Department of Medicine, Galveston.

Anatomy: Dr. Charles R. Bardeen, dean, University of Wisconsin Medical School, Madison.

Histology and Embryology: Dr. F. C. Waite, secretary, Western Reserve University School of Medicine, Cleveland.

Physiology: Dr. E. P. Lyon, dean, University of Minnesota Medical School, Minneapolis.

Biologic Chemistry: Dr. Otto Folin, professor of biologic chemistry, Medical School of Harvard University, Boston.

Pharmacology: Dr. C. W. Edmunds, assistant dean, University of Michigan Medical School, Ann Arbor.

Pathology: Dr. James Ewing, professor of pathology, Cornell University Medical School, New York.

Bacteriology and Parasitology: Dr. A. I. Kendall, dean, Northwestern University Medical School, Chicago.

Public Health and Preventive Medicine: Dr. Victor C. Vaughan, dean, University of Michigan Medical School, Ann Arbor.

The afternoon of Wednesday, March 3, will be devoted to the separate business sessions of the three organizations. It is expected that the conference will be immediately followed by the annual meeting of the American Conference on Hospital Service.

Montana April Examination

Dr. S. A. Cooney, secretary of the Montana Board of Medical Examiners, reports the written examination held at Helena, April 1-3, 1919. The examination covered 10 subjects and included 50 questions. An average of 75 per cent. was required to pass. Of the 15 candidates examined, 12 passed and 3 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
George Washington University	(1907)	79.8
College of Physicians and Surgeons, Chicago	(1901)	75.6
Rush Medical College	(1919)	*75.7,83.9
Kansas Medical College	(1911) 79.1, (1913)	79.7
College of Physicians and Surgeons, Baltimore	(1912)	78.3
Washington University	(1911)	82
John A. Creighton Medical College	(1913) 82, (1919)	79.9
Jefferson Medical College	(1904)	77.4
Medico-Chirurgical College of Philadelphia	(1900)	77.9
FAILED		
Loyola University	(1917)	67.1
Kansas City Hahnemann Medical College	(1905)	71.5
Ensworth Medical College	(1909)	38.1

*Received certificate for four years' work; will receive M.D. degree after completing his intern year.

Arkansas Eclectic May Examination

Dr. Claude E. Laws, secretary of the Arkansas Eclectic Board of Medical Examiners, reports the written examination held at Little Rock, May 13-14, 1919. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Thirty-four candidates were examined, all of whom passed.

College	Year Grad.	No. Licensed
Hospital Medical College, Atlanta	(1909)	1
Bennett Medical College	(1909)	1
American Medical College	(1902)	1
Kansas City College of Med. and Surgery	(1918) 1, (1919)	30, 31

New Jersey June Examination

Dr. Alexander MacAlister, secretary of the New Jersey Board of Medical Examiners, reports the written examination held at Trenton, June 17-18, 1919. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Thirty-six candidates were examined, all of whom passed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Georgetown University	(1917)	88
Howard University	(1916)	85.7
Baltimore Medical College	(1912)	81.4
Johns Hopkins University	(1917)	91.3
University of Maryland	(1917)	86.3
Tufts College Medical School	(1916)	82
Columbia University	(1915)	83.5
New York Homeo. Med. Coll. and Flower Hosp.	(1918)	86.7
University and Bellevue Hospital Medical College	(1918) 86.6, 88.8, 89.2	
Hahnemann Medical College and Hospital of Philadelphia	(1917) 80.7, (1918) 87.1.	
Jefferson Medical College	(1915) 82.2, (1916) 83.4, 85.4, (1917) 83.5, 84.1, 84.8, 87.8, (1918) 82.2, 83.3, 84.6, 85.4, 85.5, 86.2.	
Medico-Chirurgical College of Philadelphia	(1916)	79
University of Pennsylvania	(1917) 82.7, 87.1, (1918) 83.1, 85.5, 88.4.	
Vanderbilt University	(1912)	86
Fort Worth School of Medicine	(1902)	83.6
University of Virginia	(1917)	90.5
Queen's University	(1918)	88.6

Dr. MacAlister also reports that ninety-eight candidates were licensed by reciprocity from Jan. 1 to July 5, 1919. The following colleges were represented:

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
University of California	(1907)	New York
Yale University	(1912)	New York
Columbian University	(1902)	New York
George Washington University	(1916)	Dist. Colum.
Howard University	(1917, 2)	Dist. Colum.
Kentucky School of Medicine	(1894, 2)	Penna.
University of Louisville	(1915)	Kentucky

Baltimore Med. Coll. (1896) Pennsylvania, (1905), (1913) New York
Univ. of Maryland ..(1916, 2) New York, (1916), (1917) Maryland
Tufts College Med. School..(1910) Massachusetts, (1916) New Hamp.
Missouri Medical College .....(1889), (1896) New York
Washington University .....(1897) Connecticut
Dartmouth Medical School .....(1901) New Hamp.
Albany Medical College .....(1905), (1908), (1915) New York
Columbia University (1885) Oregon, (1898) New York, (1899) Connecticut, (1903), (1914), (1917), (1918, 4) New York.
Cornell University .....(1911) New York
Fordham University .....(1914), (1918, 3) New York
Long Island College Hospital (1898), (1914, 2), (1915, 2) New York
New York Homeopathic Medical College and Flower Hospital (1915), (1916, 2), (1917, 2), (1918) New York, (1918) Illinois.
University and Bellevue Hospital Medical College ..(1912) New York
(1913) Connecticut, (1914) (1916, 2), (1917, 2), (1918, 7) New York
University of Buffalo .....(1905), (1913) New York
University of the City of New York (1890) Illinois, (1894) New York
Medical College of Ohio .....(1890) Kentucky
Jefferson Medical College (1899), (1903) Pennsylvania, (1912), (1913) New York, (1915) West Virginia, (1916) Delaware, Alabama, (1917) New York.
Medico-Chirurgical College of Philadelphia (1903), (1911), (1913), (1914) Pennsylvania.
University of Pennsylvania (1889), (1898), (1900, 2), (1916), (1917) Pennsylvania.
Woman's Medical College of Pennsylvania .....(1915) Penna.
Temple University .....(1917) Penna.
University of Vermont .....(1904), (1908) Vermont
Medical College of Virginia .....(1915) Virginia, (1917) Maryland
Trinity Medical College .....(1900) New York
University of Munich .....(1892) New York
University of Naples .....(1896) Connecticut

Wisconsin June Examination

Dr. John M. Dodd, secretary of the Wisconsin State Board of Medical Examiners, reports the written and practical examination held at Milwaukee, June 24-26, 1919. The examination covered 18 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 16 candidates examined, 15, including 1 osteopath passed, and 1, an osteopath, failed. Six candidates were licensed by reciprocity. Seventeen candidates were licensed by virtue of a commission in the Medical Corps. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Northwestern University (1918), 83 (1919) 85, *86, 89.			
Rush Medical College (1919) *81, *84, 85.			
Washington University (1919) 77, 84, 87.			
Columbia University		(1919)	88
Jefferson Medical College		(1919)	82
Marquette University		(1919)	79, 84

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Georgetown University		(1909)	Illinois
College of Physicians and Surgeons, Chicago		(1904)	Illinois
Rush Medical College		(1917),	(1919) Illinois
University of Illinois		(1916)	Illinois
University of Louisville		(1915)	Kentucky

College	LICENSED BY ENDORSEMENT OF CREDENTIALS	Year Grad.	Certificate from
University of Arkansas		(1918)	U. S. Army
College of Physicians and Surgeons, Los Angeles		(1912)	U. S. Army
Bennett Medical College		(1915)	U. S. Army
Chicago College of Medicine and Surgery		(1916),	(1917) U. S. Army
Northwestern University		(1910),	(1917) U. S. Army
Rush Medical College		(1915)	U. S. Army
University of Illinois		(1914)	U. S. Army
St. Louis University		(1910)	U. S. Army
Cleveland College of Physicains and Surgeons		(1905)	U. S. Army
Jefferson Medical College		(1916)	U. S. Army
University of Pennsylvania		(1914, 2)	U. S. Army
Meharry Medical College		(1915)	U. S. Army
University of Virginia		(1916)	U. S. Army
Marquette University		(1917)	U. S. Navy

* Received limited licenses pending completion of their hospital internship.

District of Columbia July Examination

Dr. Edgar P. Copeland, secretary of the District of Columbia Board of Medical Supervisors, reports the oral and written examination held at Washington, July 8-10, 1919. The examination covered 16 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the eighteen candidates examined, 15 passed and 3 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University	(1919) 75.3, 81.5, 81.7, 85.2, 85.7, 86.2, 91.1.		
Howard University		(1918) 75.3, 83.5, (1919)	76.5, 82.1
Harvard University		(1917)	90.5
Middlesex College of Medicine and Surgery		(1918)	76.6
University of Pennsylvania		(1919)	90.2
University of Tennessee		(1918)	82.2
	FAILED		
Howard University		(1919)	64, 72.2
Columbus Medical College		(1884)	60

Book Notices

INDUSTRIAL MEDICINE AND SURGERY. By Harry E. Mock, B.S., M.D., F.A.C.S., Assistant Professor of Industrial Medicine and Surgery at Rush Medical College. Cloth. Price, $10 net. Pp. 846, with 210 Illustrations. Philadelphia: W. B. Saunders Company, 1919.

The purpose of this book is to describe modern American efforts and methods directed to maintenance of health, conservation of man-power, and rehabilitation of the disabled in industry. The contents fall in six parts: industrial health service; prevention; industrial medicine; industrial surgery; compensation, insurance, and medicolegal phases; and reconstruction. At the end is a bibliography of the pertinent literature since 1916, but as the references are listed alphabetically according to authors' names the practical value of the bibliography is limited. The author reveals himself in this book as an able and skilful physician and surgeon, a successful administrator of large enterprises, and a forceful propagandist and promoter of the movement to conserve the health and strength of working men and women, and he has provided a useful work for many employers, health workers, and especially physicians attached to industries and concerned with the organization and development of the medical service. Throughout it is the busy executive officer who speaks rather than the careful and thoughtful scholar, and there is no lack of evidence in both text and arrangement of undue haste in preparation and failure carefully to consider relative values. Careful revision with merciless rejection of all unnecessary words and statements—and we were about to add chapters—would increase the value of the book; and it is hoped that the author soon may be called on to prepare a second edition, and that he then may have leisure to do himself more justice than it has been permitted him in the first issue.

TOWARDS RACIAL HEALTH. A Handbook on the Training of Boys and Girls, Parents, Teachers and Social Workers. By Norah H. March, B.Sc., M.R.San.I., with Foreword by J. Arthur Thompson, M.A., LL.D., Professor of Natural History in the University of Aberdeen. New American Edition with an Introduction by Evangeline W. Young, M.D. Cloth. Price, $2 net. Pp. 320, with illustrations. New York: E. P. Dutton & Company, 1919.

Miss March's book is intended for the instruction of parents, teachers and social workers on sex education rather than for boys and girls. Evidently this subject has not been discussed in England to the extent that it has been in this country. The approach to the subject, as well as the discussion, is much more largely influenced by the biologic point of view than in most of our American books on sex hygiene, nearly a third of the book being devoted to the purely biologic side of sex development and reproduction. Although somewhat conservative, the book is scientifically sound. It is better adapted for the teacher and the parent of education and leisure than for the average reader. The carefully selected bibliography will be of assistance to those desiring to take up a further study of the subject.

OXFORD LOOSE-LEAF MEDICINE. Edited by Heny A. Christian and Sir James Mackenzie. Advance pages, Volume II. Part 1. Paper. New York: Oxford University Press, 1919.

This part contains 115 pages on diseases of the heart, by Sir James Mackenzie, and thirty-four pages on asthma and hay-fever by I. Chandler Walker. Mackenzie's topics are symptoms; heart failure; the examination of the patient; myocardial affections; angina pectoris; exhaustion, palpitation and syncope; the soldier's heart; mechanical aids in examination; modified sounds of the heart; valvular diseases; prognosis, and treatment. It is significant of the change that has come over cardiology that the diseases of the valves are discussed in eleven pages. Not so very many years ago they would have taken a much larger proportion of space. Mackenzie's treatment of all these subjects is in his usual clear style with little citation of authority but with direct, blunt statement of facts based on his wide clinical experience. Walker has an unusually lucid, up-to-date discussion of asthma, concerning the nature of which his extensive researches have made him an expert.

Squibb's Materia Medica, 1919 Edition. A Complete Alphabetical List of the Squibb Products, including all the articles of the United States Pharmacopœia (IXth Revision) and of the National Formulary (IVth, 1916, edition), together with the Non-Official Chemicals, Pharmaceutics and Newer Remedies in general use. By the Medical Department, E. R. Squibb & Sons. Cloth. Gratis. Pp. 544. New York: E. R. Squibb & Sons, 1919.

The text gives the official name of the drug, the English name, synonyms, botanic origin, habitat, part of plant used, description, chief constituents, official standards of purity and strength, dose, and list of official preparation, if any. It is to be regretted that the useless or little used drugs, such as cactus, celery, elder flowers, galega and horse-nettle are given the same prominence as those of recognized value. Some of the information concerning the drug constituents cannot be relied on, as it has evidently been compiled from dispensatories or other second-hand sources. For example, the statement is made under Sabal that the drug contains volatile oil. The researches of Mann and Lloyd have shown that the drug contains no volatile oil, although on standing alcoholic preparations may develop an ester which is volatile. The book should be useful to drug analysts, pharmacists and pharmacognocists.

Medicolegal

Death from Glanders Contracted Through Inhalation

(*Richardson v. Greenburg (N. Y.), 176 N. Y. Supp. 651*)

The Supreme Court of New York, Appellate Division, Third Department, holds, in answer to a question certified to it by the state industrial commission, that where an employee was required to lead a horse affected with glanders and during such time contracted the disease through inhalation of the bacteria, and died from the disease fourteen days thereafter, his death was not due to an accidental injury arising out of and in the course of his employment, within the meaning of the workmen's compensation law. The court says that compensation is payable by an employer only "for the disability or death of his employee resulting from an accidental personal injury," and that "injury" and "personal injury" are stated to "mean only accidental injuries arising out of and in the course of employment, and such disease or infection as may naturally and unavoidably result therefrom." The plain meaning of the words of the law, without the aid of judicial interpretation, induces the conclusion that the legislature intended to make compensatory no condition or death resulting from disease, unless the disease itself followed a traumatic injury or other injury not partaking of the nature of a disease. It is a matter of common knowledge that the conditions generally prevailing in cases of infectious disease are caused by poisons or toxins exuded by living organisms or bacteria present within the human body. Glanders cannot be differentiated from other diseases by the fact that ordinarily it is a disease which affects a horse rather than a human being, for it cannot matter whence the bacteria have proceeded which set up disease within the human body.

State Not Liable for Death of Militiaman from Inoculation

(*McAuliffe v. State (N. Y.), 176 N. Y. Supp. 679*)

The Court of Claims of New York, in dismissing a claim for damages for the death of a state militiaman from inoculation with an immunizing vaccine administered at one of the state's armories by a physician in charge of said armory, the vaccine used being alleged to have been impure, or the treatment improperly administered, says that states are not liable in damages for torts or wrongful acts committed by their agents or servants, unless such liability has been voluntarily assumed by act of the legislatures. This rule follows from the maxim of the English common law, "The king can do no wrong," and not alone from the other rule of the English common law that the sovereign cannot be sued without his consent. In organizing the national guard for the public defense, the state is exercising one of the highest and most important of the attributes of sovereignty and of the functions of government in the interest of the public at large, and under such circumstances it cannot be held liable for the negligence of its agents or servants. Furthermore the state has by statute provided a tribunal and a method for affording relief to those of its soldiers who shall be wounded or incapacitated as a result of illness and for pensioning dependents of such soldier, including his widow, minor children, or dependent mother, in case he shall have died as the result of injuries received or from illness. The state having furnished such tribunal, and submitted such cases to it for its consideration, this court is denied jurisdiction to hear and determine such claims.

Award May Be Commuted When Operation Is Necessary

(*Jensen v. F. W. Woolworth Co. (N. J.), 106 Atl. R. 808*)

The Court of Errors and Appeals of New Jersey affirms a judgment approving of the commutation to the lump sum of $1,247.25 of an award under the workmen's compensation act of $1,410 that was payable in instalments of $5 a week, when an employee had accidentally swallowed pins while assisting in trimming a show window, and a physician testified that there was a pin near the base of her brain and in his opinion an operation would have to be performed to save the woman's life; that she was in need of constant care and attention, and unless she received it, her life could not be saved. The court says that the workmen's compensation act of New Jersey provides that, as commutation is a departure from the normal method of payment, it is to be allowed only when it clearly appears that some unusual circumstances warrant such a departure. But, if to be bedridden, with the requirement of a surgical operation to save the patient's life, is not an unusual circumstance, and such a one as warrants commutation of future weekly payments into a lump sum, to enable the patient to procure the services of a surgeon and the proper medical attention and nursing, it is hard to conceive of circumstances that would call for the making of an order for commutation. Bearing in mind that it is the intention of the act that compensation payments are in lieu of wages, and are to be received by the injured employee in the same manner in which wages are ordinarily paid, that is, instalments; and while commutation is a departure from the normal method of payment, to be allowed only when it clearly appears that some unusual circumstances warrant it, the court thinks those circumstances were present in the case under consideration, namely, that the life of the employee appeared to be at stake, and that, at least in all probability, it could be saved only by a surgical operation, by the attendance of a physician, by nursing, and by medicines, all of which would require the expenditure of moneys, which the patient did not possess and could not raise. Nor was commutation in these circumstances to be defeated by the concluding provision of the statute that it shall not be made to enable the employee to satisfy a debt, or to make payment to physicians, lawyers or other persons.

Employer Not Liable for Negligence of Physician

(*Smith v. Buckeye Cotton Oil Co. (Ark.), 212 S. W. R. 88*)

The Supreme Court of Arkansas affirms a judgment on a verdict directed in favor of the defendant in this case where the plaintiff alleged that while he was employed by the defendant he had his fingers crushed, and was directed to go to a physician employed by the defendant to treat its injured employees, and that this physician treated his injuries so carelessly and negligently that the amputation of all the fingers on the injured hand became necessary. The court says that the testimony in the case appeared to have been addressed to the proposition that the physician was negligent, and that the defendant was liable for this negligence because it directed the plaintiff to consult him. There was no intimation in the pleadings that the defendant was negligent in selecting a physician, nor was there any testimony to that effect unless it was by inference that the defendant was negligent through having employed a negligent

physician. The court had a case, therefore, in which the pleadings and proof showed only that an injured employee was directed to, and placed in charge of, a physician who was guilty of negligence in his treatment of the case. But this allegation and this proof did not make a case for the jury. Where the employer owes his employee the duty of furnishing medical attention, or undertakes to discharge that duty, he does not become liable for the physician's negligence or lack of skill, but is liable only when he fails in the discharge of his duty to exercise ordinary care to select a physician possessing the requisite skill and learning and one who would give the patient the attention and treatment which the case requires.

Ordering Physical Examination Partly Discretionary

(Titus v. City of Montesano (Wash.), 181 Pac. R. 43)

The Supreme Court of Washington holds that there was no error in this personal injury case in denying the defendant's motion for an order directing the plaintiff to submit to a medical examination for the purpose of determining the extent of her alleged injury and for the purpose of qualifying the witnesses of the defendant to give testimony in the cause. The court says that the statute of that state relating to such examinations provides that, on or before the trial of any action brought to recover damages for injury to the person, the court before which such action is pending may from time to time, on application of any party therein, order and direct an examination of the person injured as to the injury complained of by a competent physician or physicians, surgeon or surgeons, in order to qualify the person or persons making the examination to testify in such case as to the extent, nature and probable duration of the injury complained of. This statute is not mandatory. It provides that the court "may . . . order and direct" a physical examination, and leaves something to the discretion of the court. When the motion was made in this instance, no issue had been framed as to the extent of the plaintiff's injuries, and no showing as to the necessity for such an examination accompanied the motion. It was not the purpose of the statute needlessly to harass a litigant, and, unless it is shown that some necessity exists for the examination at the time the application is made, the appellate court cannot say it is an abuse of discretion to deny it.

Testifying Indirectly to Privileged Communications

(McGinty v. Brotherhood of Railway Trainmen (Wis.), 172 N. W. R. 711)

The Supreme Court of Wisconsin holds, in this action brought by a mother on a policy of insurance issued on the life of her son after he had stated in his application for the insurance that his father had never had any cancerous disease, that there was no error in refusing to permit a physician to testify that he told the mother, at the time of his professional visit, that her husband had cancer. The court says that the mother had been examined adversely, and testified that the physician did not make such statement to her. A portion of the physician's deposition was then offered in evidence to show that he had made such statement. The trial court excluded the testimony, and the supreme court sees no theory on which the testimony could be received. It certainly could not be probative evidence of the fact that the father in fact had cancer. The physician could not testify to that fact. His knowledge in that respect constituted a confidential communication which the statute prohibited him to reveal. The confidential nature of the communication could not be waived by any one except the father himself. The privilege of the statute would not amount to very much if the physician were permitted to testify in this indirect manner to facts concerning which he could not give direct testimony. The testimony clearly was not admissible. A waiver by the insured of the privilege so far as confidential communications between himself and another physician were concerned did not extend to confidential communications between his father and his father's physicians.

Society Proceedings

SOUTHERN SURGICAL ASSOCIATION

Thirty-Second Annual Meeting, held in New Orleans, Dec. 16-18, 1919

The President, DR. JAMES E. THOMPSON, Galveston, Texas, in the Chair

Injection of the Gasserian Ganglion for Neuralgia and Other Conditions

DR. CARROLL W. ALLEN, New Orleans: The proper execution of the technic of this injection demands a thorough knowledge of the anatomy of the parts involved, and of the effects of injected alcohol on these parts. The method most commonly used and the one practiced by me almost exclusively is the Haertel route. It has been found that chromium sulphate exerts a curative influence on the keratitis which sometimes follows these injections. Accordingly, I have in all recent cases been giving a 4-grain tablet of this salt, three times daily, as a prophylactic, advising its use for about one month. In my last twelve cases there has been no evidence of eye inflammation. From my experience, I am convinced that when the value of these injections for these conditions are recognized they will be used extensively.

Gunshot Wounds of Brain with Retained Missiles

DR. CHARLES BAGLEY, JR., Baltimore: During the spring and summer of 1918, 175 cases of gunshot wounds of the skull and brain were studied at General Hospital No. 2, Baltimore. Removal of the foreign bodies was undertaken because of the presence or probability of infection. I am of the opinion that because of the likelihood of metallic foreign bodies of average size giving trouble even several months after the injury, they should be removed, if their removal does not offer too great difficulties. However, a metallic foreign body may remain encapsulated in the brain substance without giving trouble.

Spermatoceles and Hydroceles Containing Spermatozoa

DR. RANDOLPH WINSLOW, Baltimore: The occurrence of six cases of hydrocele containing spermatozoa, and of one of true spermatocele associated with a hydrocele in the course of a few months, has directed my attention to this condition. In the cases of which I have notes, no mention is made of an injury, except in one instance. I think it probable that in some cases, at least, true spermatoceles rupture into hydroceles and in that manner permit the ingress of spermatozoa into the sac of the tunica vaginalis. In one case there was a hydrocele with clear contents; and contiguous to but not communicating with it was another cyst containing a milky looking fluid, which showed spermatozoa when examined microscopically. This cyst might have ruptured into the hydrocele if it had remained unoperated on. The treatment of true spermatocele is usually excision, while that of the hydrocele containing spermatozoa is similar to that of ordinary hydroceles, namely, excision of the tunica vaginalis, or suturing the tunica behind the testicle, or Andrew's bottle operation, etc., and the results appear to be equally as good as in cases of uncomplicated hydroceles.

Hypodermoclysis

DR. WILLARD BARTLETT, St. Louis: When continuous hypodermoclysis is used, the visible dropper and screw clamp are added. An attempt is made to get gravity pressure by placing the container directly above the patient. As to the fluid employed, Dr. McKittrick proposed that we use plain, freshly distilled water. In view of the large amounts of fluid instilled, and the harmful effects which occasionally follow the absorption of abnormal amounts of sodium chlorid, we do not countenance its use, especially in patients already weakened by disease or surgical trauma. The water is heated to between 100 and 110 F. and is then poured into the warm container. The injection is made at a point near the outer border of the pectoral muscles, midway between the nipple and the head of the humerus. By this method, the fluid extends directly into the subcutaneous tissue of both the axilla and the breast. Absorption is almost twice as fast as

it is when the injection is under the breast alone. Only the one side is used at a time, regardless of the amount of fluid to be infused. Usually from 800 to 1,200 c.c. are given during one injection, though a much larger amount can be given if it is allowed to run in slowly. The giving of hypodermoclysis is easily accomplished without pain or distress in most patients not under the influence of a narcotic. The procedure has completely supplanted the rectal administration in my service, and when intelligently applied, seems not to have unduly disturbed the patient, has never been attended by an accident, and has given the greatest satisfaction.

Pseudomyxoma Peritonei

DR. M. H. BIGGS, Rutherfordton, N. C.: This condition is much more frequent than is generally recognized. It is caused by cellular implantation. It is histologically benign, but may be clinically malignant. If it is considered to be a form of cancer, it must be assumed that pseudomucin inhibits its destructive power. It may originate in the ovary or the intestinal tract, ovarian origin being by far the most frequent. If it is appendical in origin, the appendix has been the seat of chronic inflammation. Early invasion of the peritoneum is characterized by a pebbly appearance. In early cases the condition will sometimes be cured, and at any stage it may be inhibited, by operation.

Pseudomyxoma Peritonei in Male Subjects

DR. M. G. SEELIG, St. Louis: The characterizing feature of the disease is the accumulation of a colloid exudate in the peritoneal cavity, varying in consistency from a syrup to solid colloid masses. In some instances there is a progressive cachexia leading to death; in others the disease runs a benign course with perfect recovery after suitable operative procedure and often doubtlessly without operation. In some cases the colloid material is confined in loculi whose walls are made up of a connective tissue new growth so firm and abundant that it fuses all the viscera into a solid mass, molded, as it were, into the peritoneal cavity. The appendix is the sole responsible agent for the disease as we encounter it in the male. Treatment consists in removing the primary focus of disease—the appendix—and scooping out that portion of the exudate which can be reached conveniently and with safety, without any attempt to clear the abdominal cavity of its entire pseudomucinous contents.

A Warning Against Promiscuous Uterine Curettage

DR. J. WESLEY BOVÉE, Washington, D. C.: It is well to point out the many dangers incident to uterine curettage. Not infrequently is a pregnancy in its first month thus scraped from the uterus and perhaps never recognized. Certainly humilation has often come to the operator by discovering during curettage that an unsuspected pregnancy has been interrupted. Very often pregnancy has unnecessarily been ended by curettage for incomplete abortion. The literature teems with reports of cases of perforation of the uterus by the curet with or without dangerous sequels and even death. The cervical canal is so constantly infected that it does not seem strange that infection may be carried from it into the uterine cavity by the curet, sound or dilator. Again, it is shown by Curtis that infection of the endometrium is nearly always associated with similar infection of the tubes and most often gonorrheal. Curettement under such conditions is strongly contraindicated. The dangers from curetting are ever present. If chronic endometritis as a clinical entity is to be ruled out, one potent indication for curettage in the past will be removed.

Operative Treatment of Pelvic Inflammation

DR. CHARLES R. ROBBINS, Richmond, Va.: Pelvic inflammation is most frequently due to one of two causes: gonorrhea or infections following abortion or labor at term. Operation in gonorrheal cases may be performed with comparative safety at any stage, but radical operation in the septicemic group, in the acute stage, is attended by a high mortality and should not be done. Delay in operation on the septicemic group is an advantage, is less dangerous, and often results in symptomatic or absolute cure. The best method of treatment is that usually known as the Fowler-Ochsner-Murphy treatment. The details of operation on which emphasis is laid are the complete removal of the tube, excising also the uterine portion, and the attachment of the broad ligament to the horn of the uterus, thereby elevating the ovary away from pressure and adhesions and the temporary suspension of the uterus.

Stone in the Kidney

DR. CHARLES H. MAYO, Rochester, Minn.: Stones form in the cortex, in the calices, and in the pelvis of the kidney. The kidney is constantly eliminating living bacteria, so that it is always exposed to infection, and usually shows no results from it except gross lesions of rare occurrence. Stone formation may proceed with exceeding slowness, and without pain or other symptoms until marked destruction of the kidney occurs, mixed infection develops, or until the stone assumes great size or becomes loosened and moves into the ureter. If the stone originates in the cortex of the kidney, its growth will be slow; but if it originates in the calices or pelvis, growth may be much more rapid because of the ease with which its chemical material is secured.

Results of Operations for the Removal of Stones from the Ureter

DR. E. S. JUDD, Rochester, Minn.: Stones in the ureter may pass voluntarily into the bladder. In my experience 12 per cent. of a group of 400 persons have admitted the passing of stones. Stones may be lodged in the ureter and produce no symptoms, and again they may produce the classic syndrome of ureteral calculus. There are two methods of treatment: the nonoperative and the operative. The first method consists in the dislodging of the stone by a ureteral catheter or small sound. The kidney should not be removed unless extensively infected, as it may recover its function. Conservative methods are justified in any case of chronic kidney infection, while radical methods must be employed in acute, severe infections. Nephrectomy is the operation of choice. Dr. Braasch has removed ureteral stones in about 126 cases by nonoperative methods. During the same period, 400 patients were operated on; about half the patients require operation to rid them of stone. Two deaths occurred in the series of 400 cases, only one of which was directly due to the operation.

Uretero-Ureteral Anastomosis

DR. REUBEN PETERSON, Ann Arbor, Mich.: Ureteral Anastomosis is a perfectly feasible procedure. Not only can the duct be made patent with little or no stricture, but a functionating kidney and ureter can result. In skilled hands, the primary mortality should be very small. The invagination methods are preferable to the transverse end-to-end method, since they are followed by fewer cases of leakage. The end-in-end method of anastomosis is the operation of choice. It is extremely simple, and sacrifices the minimum amount of the ureter.

Sarcoma of Stomach

DR. WILLIAM D. HAGGARD, Nashville, Tenn.: Primary gastric sarcoma is one of the rarest surgical diseases. A certain diagnosis of sarcoma of the stomach before operation is practically impossible. Only an operative diagnosis is possible. Hemorrhage from the stomach and blood in the stools are a frequent occurrence, especially in the round cell variety, although in sarcoma it is not so frequent as in cancer. Early exploration should be invoked.

Gastro-Enterostomy Following Rammstedt Operation Which Failed to Relieve the Obstruction

DR. FRANK D. SMYTHE, Memphis, Tenn.: Posterior gastroenterostomy should be performed as a last resort in cases in which a Rammstedt operation has failed to relieve the obstruction. An otherwise hopeless case may be saved thereby, as in my case. The second operation was done seventy-six hours after the first.

Ileostomy for Postoperative Obstruction Following Appendectomy

DR. EDWARD P. RICHARDSON, Boston: I have to report seven cases of obstruction occurring during convalescence from

appendicitis. In five of these, ileostomy was done for obstruction apparently mechanical in nature. Four of these patients were children. Recovery with spontaneous closure of the fistula occurred, the patients remaining well for from one to eight years These results suggest that ileostomy is a more favorable method of treatment in obstruction by recent adhesions than in other types of obstruction. Good results depend on the operation being undertaken early, and it is far better to operate unnecessarily occasionally than to postpone operation until the later stages of obstruction have developed.

Surgical Drainage from a Biologic Standpoint

DR. J. SHELTON HORSLEY, Richmond, Va.: Drainage from the abdominal cavity is practically always uphill, and yet it is successful because the drainage material not only relieves the pressure, but also provokes the outpouring of large quantities of lymph in an effort to extrude the drainage material, and this serum carries along with it products of bacterial infection that might otherwise be absorbed. In solid soft tissue, as in the thigh, the lymph supply is not so abundant, and consequently gravity drainage must be used. In the abdomen, the supply of lymph is so abundant and its pouring out so constant along the drainage tract it makes little difference whether the drainage tube is pointed up or down, so long as it is of sufficient size and of the proper kind of material to provoke the outpouring of serum. Drainage should be instituted after every radical operation for cancer of the breast or neck, as it tends to prevent the absorption of cancer cells that may be left in the wound. Drainage of infected epithelial lined hollow viscera carries off the inflammatory products, affords physiologic rest, and also produces a reversal of the circulation of the local lymphatics that will prevent the absorption of much of the septic products. Drainage material should be selected with a view to inducing a reversed flow of lymph to carry away the liquid products of the wound, and also with a view to injuring the wound as little as possible. Ideal drainage material has not been found, but empirically combinations of gauze and rubber tissue have been worked out that are fairly satisfactory.

Carrel-Dakin Treatment of Infected Wounds

DR. E. DUNBAR NEWELL, Chattanooga, Tenn.: It was almost universally observed in the hospitals of the American Expeditionary Forces that patients whose infected wounds had been properly treated by the Carrel-Dakin method suffered less pain, had less systemic infection, were more alert and cheerful, had a more rapid convalescence, and the wounds closed far earlier and with less deformity and less morbidity than in those patients whose infected wounds were treated by other methods.

Results and Feasibility of Treating Lymphangiomas with Injections of Boiling Water

DR. FRANCIS REDER, St. Louis: So far eight patients have been injected with boiling water. The reaction following the injection seemed unusually severe when compared with the reaction following the injection of a hemangioma. For twenty-four hours the patient gave evidence of feeling sick, and usually registered a temperature of 100 or 101 F. with a pulse from 100 to 110. When the reaction had passed off, which was generally after the third day, the feeling of euphoria returned. The increase in the size of the tumor after the injection, although considerable, bore a minor ratio to the increase seen in hemangiomas after injection. Inflammatory processes seemed active and prolonged, the skin giving evidence of the severity by a marked reddish discoloration. Retrogression seemed very slow. It required from four to six months to show that the tumor had decreased in size. In the case of a baby with the left foot about four times its normal size, it required two years for the foot to attain the size to be fitted with a shoe. Subsequent injections are almost impossible to be given, if the initial injection has been a thorough one. The tumor mass is so hard that no hot water can be forced into it. All of the eight patients injected with boiling water have been benefited, but in none has the tumor entirely disappeared.

Some Plastic Operations on the Rectum

DR. HARVEY B. STONE, Baltimore: In certain special types of stricture of the rectum, an application of the principle of the Heineke-Mikulicz pyloroplasty is helpful. These strictures are of the diaphragm type; that is, firm, with small lumen, but narrow and annular in their involvement of the long axis of the bowel. In tubular strictures of the rectum, occurring in the lower 4 inches of the bowel in multiparous women, the utilization of part of the voluminous vaginal mucosa as a transplant into the rectum has been tried. This has been done only when long continued dilatations have failed to give relief, and when the Wassermann test has been for a long time negative. The advantages of this operation are direct closure of the urethral orifice, the complete removal of the fistulous area of the rectum, the interposition of perineal structures between rectum and urethra, and the temporary diversion of the urine. It has proved very successful in practice.

Autogenous Bone Grafting for Repair in Fractures of Long Bones

DR. FRANK MARTIN, Baltimore: The chief factors for successful bone grafting are perfect aseptic technic; avoidance of mechanical injury or trauma to the graft; scrupulous avoidance of traumatizing tissues; definite and firm fixation of the graft, and the allowing of a long interval to elapse after complete healing of the wound. Grafts will not remain viable when there is infection. There should be perfect hemostasis.

Oxycephaly

DR. STEPHEN H. WATTS, Charlottesville, Va.: It is only in recent years that operative measures have been undertaken with the object of combating the symptoms of increased intracranial pressure, especially the threatened blindness. Since most observers think that this increased pressure is due to the disproportionate growth of the brain and skull, decompression seems to be the operation of choice; moreover, it has the advantage of simplicity and relative safety. It should be done early, for in cases with irreparable optic atrophy and no other pressure symptoms, operation is not indicated. The results of this operation in the small number of cases in which it has been done are distinctly encouraging, in spite of the fact that the optic atrophy was rather advanced in most instances. The patient on whom I did a bilateral subtemporal decompression was seen about two years after this operation. His general condition was much better, and he seemed to see better, as he stumbled much less in walking. He could count fingers at 3 feet, which he could not do before operation. Examination of the eye grounds, however, detected practically no change, there being a marked optic atrophy in both eyes. An interesting feature of this case is that at operation the bulging of the brain was so marked that the temporal fascia could not be at all approximated on either side; therefore the defects were covered by transplanted patches of fascia lata. Another point of interest is the ossification of the tissues over the region of the decompression, this bone showing the same digital impressions as the rest of the skull.

An Efficient Treatment for Carbuncle

DR. A. C. SCOTT, Temple, Texas: By strong traction the mass is lifted out of its bed while the cautery sweeps back and forth between it and the cellular tissue below or skims along the fascia covering the muscle beneath or penetrating the muscle, if necessary, until the entire mass is free. If any vessels spurt freely or fail to close when the cautery is held in contact with them a few seconds, they should be ligated. Any doubtful places beneath the remaining skin margins should be explored by the cautery tip. If the emission of steam is noted, the cautery should be applied until the cavity is apparently dry. Such a wound is now sterile and may be handled as any sterile burn. As soon as all burned tissue has been cleared away, perforated skin grafts sufficient to cover the granular surface soon complete the cure. The period of convalescence appears to be 50 per cent. less than by the old methods of treatment.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

January, 1920, **19**, No. 1

*Study of Achondroplasia. T. F. Wheeldon, Richmond, Va.—p. 1.
*Food Value of Milk of Water Buffalo. W. W. Cadbury, Canton, China.—p. 38.
*Dextrose Tolerance in Atrophic Infants. P. M. Mattill, K. M. Mayer, and L. W. Sauer, Chicago.—p. 42.
*Case of Hypersensitiveness to Cow's Milk. E. A. Park, Baltimore. —p. 46.
Anomaly of Diaphragm, with Herniation into Thorax of Certain Viscera Resulting in Gastric and Intestinal Obstruction. L. R. DeBuys, New Orleans.—p. 55.

Achondroplasia.—Wheeldon reviews the literature and reports six cases. Two show a new symptom, a wedge-shaped vertebra, which falls in the group of symptoms of infolding, and which, Wheeldon says, fortifies the belief that achondroplasia is produced by the smallness of the amnion.

Milk of Water Buffalo.—Cadbury shows that the milk of the water buffalo is a valuable dairy product and contains on an average 12.6 per cent. of fat. This milk can easily be modified for infant's use, as is shown by a table of formulas.

Dextrose Tolerance.—The dextrose (glucose) tolerance of the approximately normal infant, as determined by the Woodyatt method, is very likely identical with that of the normal adult, which is 0.8 to 0.9 gm. per kilogram per hour. But the tolerance of atrophic infants for dextrose is considerably greater: it varied in the authors' seven cases from 1.4 or 1.5 gm. to 1.8 gm. per kilogram per hour.

Hypersensitiveness to Cow's Milk.—Park reports the existence of hypersensitiveness to cow's milk in an infant 6 weeks old who had never been known to receive cow's milk previously, so that it seems necessary to regard the condition as prenatal in origin. The possibility that the hypersensitiveness was derived passively from the mother was excluded by its duration. In the absence of evidence that the peculiarity was acquired, it must be regarded as having been inherent in the germ plasm. Attempts at desensitization were successful.

American Journal of Insanity, Baltimore

October, 1919, **76**, No. 2

Cross Sections of Mental Hygiene, 1844, 1869, 1894. E. E. Southard, Boston.—p. 91.
Establishment of a National Institute of Neurology. H. Cushing, Boston.—p. 113.
Classification of Nervous and Mental Diseases. S. T. Orton, Philadelphia.—p. 131.
Rehabilitation in Nervous and Mental Cases Among Ex-Soldiers. C. B. Farrar, Canada.—p. 145.
Chemical Analyses of Two Pathologic Human Brains. C. G. MacArthur and E. A. Doisy, Palo Alto, Calif.—p. 159.

American Journal of Medical Sciences, Philadelphia

December, 1919, **158**, No. 6

Medical Aspects of Reconstruction. W. S. Thayer, Baltimore.—p. 765.
Cardiac Diagnosis in Light of Experiences with Army Physical Examinations. L. A. Conner, New York.—p. 773.
*Case of Rupture of Aortic Aneurysm into Left Innominate Vein. J. B. Herrick, Chicago.—p. 782.
*Clinical Significance of Postural Changes in Blood Pressures and Secondary Waves of Arterial Blood Pressure. H. Sewall, Denver. —p. 786.
*Vital Capacity of Lungs and Carbon Dioxid Combining Capacity of Blood in Cases of "Effort Syndrome." F. D. Adams, Washington, D. C., and C. C. Sturgis, Pendleton, Ore.—p. 816.
*Studies of Cases of "Effort Syndrome" with Measured Work. T. M. Mabon, Pittsburgh.—p. 818.
*Position of Arm in Blood Pressure Measurements. M. H. Kahn, New York.—p. 823.
*Functional Diagnosis of Polyglandular Disease in Acromegaly and Other Disturbances of Hypophysis. Report of Cases. C. P. Howard, Iowa City, Iowa.—p. 830.
*Problem of Nutrition and a Satisfactory Method of Feeding in High Intestinal Fistulas. M. M. Peet, Ann Arbor, Mich.—p. 839.
Later Stages of So-Called War Nephritis. T. Howard and A. F. Robertson, U. S. Army.—p. 845.
Lethargic Encephalitis in the A. E. F. A. Skversky, New York. —p. 849.
Significance of Certain Pulmonary Lesions in Relation to Etiology of Influenza. E. W. Goodpasture, Boston.—p. 863.
Roentgenologic Determination of Pulmonary Tuberculosis. F. E. Diemer and I. H. Cramer, Portland, Ore.—p. 871.

Rupture of Aortic Aneurysm.—In Herrick's case the rupture was less than 1 cm. from the superior vena cava. The opening was 1.5 cm. in diameter. A typical syphilitic aortitis was present. Herrick discusses the clinical history and reviews the literature.

Postural Changes in Blood Pressures.—Sewall analyzes much material to demonstrate anew the clinical importance of tests to determine the quantitative range as contrasted with the qualitative perversion of physiologic functions. It is suggested that estimations should be made under different conditions of the velocity of the blood current, as represented by the product obtained in multiplying the pulse pressure by the pulse rate. Attention is called to the great frequency with which, in persons suffering from weakness of the circulation, the pulse sounds revealed by the auscultatory method are enfeebled or absent.

Lungs and Blood in Effort Syndrome.—Neither the number of cases found nor the degree of decrease of vital capacity present in the series studied by Adams and Sturgis is sufficient to indicate that the tendency to dyspnea in these patients is in any way dependent on a diminished vital capacity of the lungs. Tests of general muscular strength showed no relation between the muscular development and the vital capacity of the lungs. Observations were made in fifty-four cases, and from the carbon dioxid chemically bound as bicarbonate was found to fall within normal limits in all instances. Since, therefore, the carbon dioxid combining capacity of the blood is normal, there is no indication that a decrease in the buffer salts of the blood is a factor in the production of dyspnea in patients with "irritable heart."

Effort Syndrome with Measured Work.—A study was undertaken by Mabon of the changes in pulse rate and blood pressure taking place in fifty patients with "effort syndrome" after the hardest exercise which they could be induced to perform. These were, for the most part, patients with symptoms of many years' duration. The amount of work which they could do before becoming fatigued was much less than was done by normal controls. The pulse rate at rest was higher than in the normals, but the rise after exercise and the time for return of the pulse rate to its resting value were not definitely abnormal. No "delayed rise" of blood pressure, suggesting myocardial inefficiency, was observed. The amount of work which the subjects were able to perform usually corresponded closely to their physical strength, as determined by tests of the skeletal muscles, and this, Mabon says, indicates that lack of development of the skeletal muscular system is a factor to be considered in the cause of the fatigue following slight exertion in certain types of cases of "effort syndrome."

Arm in Blood Pressure Measurements.—Tests were made by Kahn to note the effect of raising the arm on auscultatory blood pressure readings. The normal effect is a progressive fall of the systolic and diastolic pressure readings as the arm is raised upward; the amount of fall increases with the elevation. Therefore, blood pressure readings should be obtained with the patient's arm at the side of his chest, as the normal reading varies considerably with the arm in different positions. This holds good for the seated, the standing and the recumbent postures.

Polyglandular Disease in Acromegaly.—From an analysis made by Howard of six cases it is evident that a secondary hyperpituitarism may result from a greatly or rapidly increasing intracranial pressure. The determination of a decrease in the sugar tolerance in the presence of other symptoms of disturbance of pituitary function justifies a diagnosis of increased activity of the pars intermedia. The epinephrin conjunctival test may be of positive value in certain cases of dyspituitarism in demonstrating a hypofunction of the chromaffin system. The subcutaneous epinephrin test was only of doubtful value in both normal and pathologic cases. Both the conjunctival and subcutaneous pituitary extract tests were too equivocal to be depended on for studying the functional activity of the hypophysis. The internal administration of the pituitary extract of either the whole gland or the anterior or the posterior lobes appears to exert no definite influence on the symtomatology of the disease.

Nutrition and Feeding in Intestinal Fistulas.—The problem of nutrition in high intestinal fistulas is solved by Peet by the enteric administration of foodstuffs through a small, soft catheter, inserted by way of the fistula into the efferent loop. By this method sufficient calories are utilized to maintain a good, physical condition and to build up an emaciated patient, so that he can withstand necessary operative treatment.

American Journal of Public Health, Concord, N. H.

December, 1919, **9**, No. 12

Historical Development of Public Health Work in England. A. Newsholme, London, England.—p. 907.
Administrative Measures Against Influenza. A. W. Freeman, Columbus, Ohio.—p. 919.
American Red Cross Health Crusade. After Effects of Influenza in Cincinnati. W. H. Peters, Cincinnati.—p. 924.
Public Health Perspective. L. L. Lumsden, U. S. P. H Service.—p. 930.
Need and Method of Coordinating Federal, State and Local Health Agencies in Promoting Industrial Hygiene. J. W. Schereschewsky, Washington, D. C.—p. 937.
Public Health Work in India. II. Review of Nature and Progress of Sanitation. H. J. Jenks, Berkeley, Calif.—p. 943.
Public Health Departments and Private Health Agencies. C. E. McCombs, New York.—p. 951.
Standard System of Bacteriologic Dilutions. W. F. Wells, Boston.—p. 956.
Influenza in Framingham, Mass. D. B. Armstrong, Framingham.—p. 960.

Annals of Surgery, Philadelphia

January, 1920, **71**, No. 1

Surgical Problems in Reconstruction of Peripheral Nerve Injuries. C. H. Frazier, Philadelphia.—p. 1.
*Lymphosarcoma of Mesentery. L. L. Bigelow and J. Forman, Columbus, Ohio.—p. 11.
*Recurrent Nephrolithiasis. Report of Case. O. F. Lamson, Seattle.—p. 16.
*Hour-Glass Bladder: Resection of Base of Bladder for Transverse Septums. J. R. Caulk, St. Louis.—p. 22.
Elephantiasis and Kondoleon Operation. Report of Case. T. M. Green, Wilmington, N. C.—p. 28.
Studies in Bone Growth. F. H. Albee, New York, and H. F. Morrison, U. S. Army.—p. 32.
Causes of Delayed Union and Nonunion in Fractures of Long Bones. W. L. Estes Jr., Bethlehem, Pa.—p. 40.
*Treatment of Bone Cavities. W. Martin, New York.—p. 47.
Abduction Treatment of Central Luxation of Femur. Report of Cases. R. Whitman, New York.—p. 62.
Gunshot Fractures of Tibia and Fibula. F. Christopher, Chicago.—p. 66.
Rapid Closure of Surgical Wounds, Specially of Laparotomies. A. L. Soresi, New York.—p. 84.

Lymphosarcoma of Mesentery.—The case presented by Bigelow and Forman adds one to the few cases of mesenteric sarcoma on record and the long list of sarcomas in other regions where the onset of the symptoms and the development of a tumor have followed a definite history of trauma. The patient suffered from abdominal "cramps" for several weeks before the "lump" was noticed. The case conforms to the established picture of a regional lymphosarcoma. The size of the mesenteric mass, as compared with the involved retroperitoneal nodes, leaves little doubt that the tumor arose in the mesentery.

Recurrent Nephrolithiasis.—Thorough flushing of the urinary channels through drinking freely of water, preferably of distilled water, Lamson says, may help in the dislodgment and removal of any possible nucleus of future stones. This treatment must be continued for a considerable period even after the urine has completely cleared up. Faulty or incomplete surgery, by leaving in the pelvis fragments of stones, may contribute toward a recurrence of nephrolithiasis.

Hour-Glass Bladder.—Caulk emphasizes the importance of free mobilization of the bladder before resection; the value of ureter catheter drainage in bladder resection; the need of complete removal of such transverse partitions and not temporizing with mere slit operations; the importance of vesical spasm in the neighborhood of inflammatory areas, and the protective value to a kidney of removing causes of vesical spasm in the presence of a patent ureteral vesical valve.

Treatment of Bone Cavities.—When the removal of sufficient portions of the wall of the cavity to allow the soft parts to fall in and fill it up is impracticable, as in certain tunnels and cavities near joints, some form of plugging is indicated. Of the many materials used as plugs Martin favors the free fat transplants.

Archives of Neurology and Psychiatry, Chicago

January, 1920, **3**, No. 1

*Histopathology of Brain and Spinal Cord in Case Presenting a Post-influenzal Lethargic Encephalitis Syndrome. H. A. Calhoun, Iowa City, Ia.—p. 1.
*Effects of Gunshot Wounds of Head. Based on Two Hundred Cases. C. H. Frazier and S. D. Ingham, Philadelphia.—p. 17.
*Comparison of Anterior Horn Cells in Normal Spinal Cord and After Amputation. A. E. Taft, Philadelphia.—p. 41.
Nonconcomitance of Spinal Fluid Tests. H. C. Solomon, Boston.—p. 49.
Influenza Psychoses in Successive Epidemics. K. A. Menninger, Topeka, Kan.—p. 57.
Résumé of Neurologic and Psychiatric Observations in a Hospital Center in France. J. W. Stephenson, New York.—p. 61.

Lethargic Encephalitis.—The case reported by Calhoun belongs to the new epidemic encephalitis group. The pathology is an acute infiltrative encephalomyelitis, the most marked changes occurring about the blood vessels of the thalamus, the cranial nerve nuclei, the floor of the fourth ventricle and in the white substance of the spinal cord.

Gunshot Wounds of Head.—The conditions in which Frazier and Ingham believe operation for cranial defects is indicated are: 1. For cosmetic reasons, especially when the defect is in the frontal region below the hair line. 2. In certain selected cases of epilepsy. 3. In the presence of a large defect where the brain is exposed to trauma. 4. When the patient is apprehensive, because of the defect and he dreads the possibility of a direct blow on the uncovered cortex. 5. In a few cases where the symptoms are wholly subjective an operation is advisable in the hope that, combined with the influence of suggestion, the neurosis will be relieved. Under these indications the authors have operated in fifty-nine out of 153 cases of cranial defects.

Studies on Anterior Horn Cells.—Cell counts were made by Taft on the anterior horns of the spinal cord in twenty-eight cases. Three of these were cases following amputation of an extremity. The twenty-five additional cases were said not to have had signs of a cord lesions. Variations in the counts between the two sides in the amputated cases was not more than two or three cells in the final average. In two of these, the greater number was on the side corresponding to the amputation. Variations in the counts between the two sides in the cases without amputation was at times greater than with amputation. In the sections where identification was made of the right and left sides, there appears no uniform difference between the two corresponding counts.

Boston Medical and Surgical Journal

Dec. 25, 1919, **181**, No. 26

Vaccines in Influenza. W. H. Watters, Boston.—p. 727.
*Primary Sarcoma of Stomach. A. R. Kimpton, Boston.—p. 731.
Functional Heart Disturbances in Women. F. L. Meredith, New York.—p. 734.
Enlarged Thymus Gland in Infancy and Its Treatment by Radium. H. W. Brayton and A. C. Heublein, Hartford, Conn.—p. 740.

Jan. 1, 1920, **182**, No. 1

"Flat Foot" and other Static Foot Troubles. F. J. Cotton, Boston.—p. 1.
Frequency of Urination. F. D. Davis, Springfield, Mass.—p. 11.

Primary Sarcoma of Stomach.—Kimpton reports the case of a patient who is alive and perfectly well, with no evidence of return of the sarcoma five years and ten months after an extensive resection of the stomach for a very rapidly growing sarcoma of the round cell type. She is able to drive, oil and grease, and even change the tires of her own car.

Canadian Medical Association Journal, Toronto

December, 1919, **9**, No. 12

Mental Hygiene in Relation to Social Hygiene. A. H. Desloges, Montreal.—p. 1057.
Multiple Infarcts of Spleen in Malignant Endocarditis. Rupture of Spleen and Peritonitis. A. Vallee, Quebec.—p. 1064.
Practical Aspects of Quarantine for Influenza. T. H. Whitelaw, Alberta.—p. 1070.
Treatment of Influenza. F. H. Wetmore, Hampton, N. B.—p. 1075.
Mental Tests in Practice. A. G. Morphy, Montreal.—p. 1081.
Perforating Gunshot Wound of Face with Extensive Destruction of Superior Maxillas. J. N. Roy, Montreal.—p. 1088.

Mental Excitement in Psychopathic Hospital; Its Prevention and Care. E. Mills.—p. 1101.
Bacillus Coli Infection of Kidney. P. Weatherbe, Halifax, N. S. —p. 1107.

Iowa State Medical Society Journal, Des Moines

Dec. 15, 1919, **9**, No. 12

Roentgenotherapy and Radium in Surgery. F. L. Nelson, Ottumwa. —p. 400.
Laboratory Service of Divisional Laboratories. L. A. Fritze.—p. 403.

Journal of Experimental Medicine, Baltimore

Jan. 1, 1919, **31**, No. 1

*Lymphocyte in Natural and Induced Resistance to Transplanted Cancer. V. Histologic Study of Lymphoid Tissue of Mice with Induced Immunity to Transplanted Cancer. J. B. Murphy and W. Nakahara, New York.—p. 1.
Studies on Roentgen-Ray Effects. V. Effect of Small Doses of Roentgen Ray of Low Penetration on Lymphoid Tissue of Mice. W. Nakahara and J. B. Murphy, New York.—p. 13.
*Toxins and Antitoxins of B. Dysenteriæ, Shiga. P. K. Olitsky and I. J. Kligler, New York.—p. 19.
Cultural Differentiation of Beta Hemolytic Streptococci of Human and Bovine Origin. J. H. Brown, Princeton, N. J.—p. 35.
*Dairy Infection with Streptococcus Epidemicus. J. H. Brown and M. L. Orcutt, Princeton, N. J.—p. 49
Effects of Intravenous Injections of Dichlorethylsulfide in Rabbits, with Special Reference to Its Leukotoxic Action. A. M. Pappenheimer and M. Vance, New York.—p. 71.
Fungous Developmental Growth Forms of B. Influenza. H. W. Wade, and C. Manalang, Manila.—p. 95.
*Method of Standardizing Bacterial Suspensions. F. L. Gates, New York.—p. 105.

Lymphocyte in Resistance to Transplanted Cancer.—Murphy and Nakahara found that mice immunized against cancer by means of an injection of defibrinated blood show in the germinal centers of the lymphoid organs a marked increase in the numbers of mitotic figures. The increase becomes evident forty-eight hours after the injection in the majority of instances, and reaches its climax at about the fifth day. After this time it subsides, returning to the normal rate about the tenth day. These immunized animals, when inoculated with a cancer graft ten days after the injection, show a second stimulation of the lymphoid centers similar to the first but more intense in character. This increase in the number of mitotic figures becomes evident as early as twenty-four hours after the cancer inoculation and persists in a marked degree for a week, after which there is a gradual return to the normal rate. The lymphocytes of the circulating blood during the establishment of the immunity show frequent examples of amitotic division, and many examples of irregular and lobulated nuclei. These changes suggest intensified functional activity. Cellular reaction in the subcutaneous tissues of immunized animals is present only in the region infiltrated by the injected cells. This fact becomes conspicuous when the immunizing injection is given intraperitoneally, in which case no cellular accumulations are noted in the loose connective tissues. No constant cellular changes were noted in the bone marrow, thymus or thyroid gland, liver or kidney of the treated animals.

Bacillus Dysenteriae Shiga.—Olitsky and Kligler have separated an exotoxin and an endotoxin from cultures of the Shiga dysentery bacillus. The two toxins are physically and biologically distinct. The exotoxin is relatively heat labile, arises in the early period of growth, and yields an antiexotoxic immune serum. The endotoxin, on the other hand, is heat stable, is formed in the later period of growth, and is not neutralized by the antiexotoxic serum. The exotoxin exhibits a specific affinity for the central nervous organs in the rabbit, giving rise to a characteristic lesion—mainly, hemorrhages, necroses and possibly a perivascular infiltration in the gray matter of the upper spinal cord and medulla. The endotoxin exerts a typical action on the intestinal tract, producing edema, hemorrhages, necroses and ulcerations, especially in the large intestine. A potent antidysenteric serum should contain antibodies against the exotoxin as well as the endotoxin. That such a serum can be produced in horses has been demonstrated experimentally.

Dairy Infection with Epidemic Streptococcus.—A streptococcus epidemic of moderate extent and severity was characterized by clinical symptoms different from the usual septic sore throat, though the organism found was culturally *Streptococcus epidemicus*. The infection was traced to the milk from a single quarter of the udder of a cow in a dairy of 112 cows producing an otherwise excellent grade of raw milk. A number of the milkers on the dairy farm were found infected. It was impossible to trace the infection of the cow's udder to any one of the milkers, though such an infection seems probable since the streptococcus isolated from the cow was in every respect like streptococci isolated from patients and milkers, and different from those usually found in normal cows or cows with garget. Certain recommendations are made to safeguard producers of raw milk against the occurrence of such epidemics.

Standardization of Bacterial Suspensions.—The opacity of a bacterial suspension is measured by the length of the column of the suspension required to cause the disappearace of a wire loop. By a simple formula the measured opacity is translated into terms of the concentration of bacteria per cubic centimeter, and so made comparable with that of other suspensions of the same organism. An instrument for measuring the opacity of bacterial suspensions is described in detail.

Journal of Infectious Diseases, Chicago

January, 1920, **26**, No. 1

Ultraspectroscopic Studies on Blood Serum. I. Antagonistic Action of Salt in Blood Serum. T. Tadokoro, Chicago.—p. 1.
Ultraspectroscopic Studies on Blood Serum. II. Difference in Colloidal State of Normal and Immune Serum. T. Tadokora and Y. Nakayama, Chicago.—p. 8.
*Nonlactose Fermenting Organisms from the Feces of Influenza Patients. N. P. Sherwood, C. M. Downs and J. B. McNaught, Lawrence, Kan. —p. 17.
*Hemolytic Streptococci in Throat in Certain Acute Infectious Diseases. A. Otteraaen, Chicago.—p. 23.
Bacteriology of Chronic Empyema. J. E Gordon, Camp Gordon, Ga. —p. 29.
Phenol Red-China Blue as an Indicator in Fermentation Tests of Bacterial Cultures. K. Morishima, Washington, D. C.—p. 43.
Metabolism of Virulent Human Tubercle Bacilli. A. I. Kendall, A. A. Day and A. W. Walker, Chicago.—p. 45.
Action of B. Typhosus on Xylose and Some of Other Less Frequently Used Sugars. O. Teague and K. Morishima, Washington, D. C. —p. 52.
Metabolism of Bovine Tubercle Bacilli. A. I. Kendall, A. A. Day, and A. W. Walker, Chicago.—p. 77.
*Complement Fixation in Diagnosis of Tuberculosis. W. H. Moursund, Ft. Sam Houston, Texas.—p. 85.

Nonlactose Fermenters in Feces in Influenza.—Bacteriologic examinations of the feces of thirty-two patients with influenza showed the presence of *B. typhosus* in three, and of enteritidis-like organisms in seventeen others. Examination in control cases (one case of typhoid and one of mumps, two cases of measles, three cases of tonsillitis, several cases of lobar pneumonia and several surgical cases) yielded *B. typhosus* in the case of typhoid, but no enteritidis-like organisms in any of the other cases. There seemed to be no correlation between the nature of the stools and the presence of these organisms. They were found in both diarrheal and constipated stools, in mild and severe cases of influenza. The authors point out that if these organisms have no clinical significance in these cases, it would seem to raise the question as to the value of much of the published work on epidemics of food poisoning, supposedly due to enteritidis-like organisms where the mere presence in feces, coupled with more or less vague clinical pictures quite similar to many cases of influenza, have been assumed to prove the enteritidis-like organisms as being the causative factor.

Hemolytic Streptococci in the Throat.—The throats of 300 patients were examined by Otteraaen. He says that hemolytic streptococci are frequent inhabitants of the throats of normal individuals and of persons suffering from acute infectious diseases. These streptococci are not virulent so far as indicated by the results of animal inoculations and phagocytoses experiments. Otteraaen says that the enrichment method should be used in preference to the surface plate method in examinations for streptococci.

Complement Fixation in Diagnosis of Tuberculosis.—The complement fixation test for tuberculosis, as described in Moursund's paper, is of no value as a diagnostic or prognostic aid. The complement fixation test for tuberculosis with alcoholic extract of tubercle bacilli as antigen is not specific.

Not all complement fixation tests with bacterial antigens are specific. A large percentage of serums giving a positive Wassermann reaction give fixation with tubercle and gonococcus antigens. A certain number of individuals not infected with tuberculosis or gonorrhea will give positive fixation tests with one or both of the corresponding antigens.

Journal of Laboratory and Clinical Medicine, St. Louis

December, 1919, **5**, No. 3

Applications of Pragmatic Method to Psychiatry. E. E. Southard, Boston.—p. 139.
*Relation of Glycogen to Pathologic Changes in Pancreatic Diabetes. D. M. Ervin, Cincinnati.—p. 146.
*Pathology of Influenzal Pneumonia. O. J. Walker, Youngstown.—p. 154.
Choice of Serums in Treatment of Meningococcus Sepsis. M. B. Cohen, Ashland.—p. 176.
New Stomach Examiner Based on Hydraulic Principle. K. Togami, Fukuoka, Japan.—p. 178.
*Preformed Ammonia in Cerebrospinal Fluid. P. F. Morse and E. S. Crump, Detroit.—p. 185.

Glycogen and Pancreatic Diabetes.—Glycogen is a stabilizing colloid in the cell and as such prevents the breaking of the emulsion or fatty degeneration by its resistance to acids, salts, etc. Glycogen is hydrolyzed by acids, and when hydrolyzed, there is left a protein-fat emulsion that is but poorly resistant against acids. In diabetes, Ervin says, no glycogen is formed, the fat is only slightly emulsified, permitting a high concentration of the fats or soaps to reach the cell and a consequent limited oxidation with the production of the acetone bodies. The equilibrium of glycogen with glucose is shifted toward the glucose side by the presence of the hydrogen ion; hence the high blood sugars in fevers, mercury and phosphorus poisoning and nephritis.

Pathology of Influenzal Pneumonia.—The pneumococcus and hemolytic streptococcus were the most frequent secondary invaders found in the lungs at necropsy in the pneumonias at Camp Sherman. Pfeiffer's bacillus was found in only 4 per cent. of the cases. Walker claims that interstitial and lobular bronchopneumonia cannot be regarded as typical lesions resulting from the invasion by the hemolytic streptococcus. The pneumococcus was found to be the only invader just as frequently as the hemolytic streptococcus in these types of pneumonias. In fact, it is doubtful whether the type of organism isolated from pulmonary tissue in pneumonia is of any great value in determining the type of pneumonia present, for the type of organism concerned and the type of lesion in the lung are decidedly variable at different times even at the same station. Influenzal pneumonia is primarly an acute, hemorrhagic lesion, interstitial, nodular, or massive in extent, arising from a pulmonary capillary phlebitis with disseminated capillary necrosis due to some toxic agent, and resulting in a secondary purulent pneumonia with healing by organization. The organism or organisms predominately present in nose or throat in the individual in any particular section of the country is the organism most commonly found in cultures and tissue sections from the lungs of secondary pneumonias in that region. Empyema and pericarditis were frequent complications.

Preformed Ammonia in Cerebrospinal Fluid.—Morse and Crump present a method for the determination of excess preformed ammonia in the spinal fluid, which they have found to be great value for quickly determining the cause of coma. To an appropriate quantity (2 c.c.) of spinal fluid, an equal quantity of Nessler's reagent is added. In normal persons and in conditions not tending to acidosis or nitrogen retention, scarcely any brown color develops. A cloudy greenish gray precipitate gradually forms and the fluid turns a dirty pale green color. When there is acidosis or nitrogen retention from any cause, a deep brown color develops immediately, the depth of color depending on the amount of ammonia present in the spinal fluid. Only one precaution is necessary. The fluid must be free from contaminating bacteria. These form ammonia and give false readings. Sterile spinal fluids, well corked, give good reactions even when several days old. The reaction is read immediately (within thirty seconds). In general, cases of acidosis associated with infection, and terminal stages of meningitis, develop less color than cases of uremia with nitrogen retention.

Journal of Orthopedic Surgery, Lincoln, Neb.

December, 1919, **1**, No. 12

Calcaneo Cavus and Its Treatment. N. Dunn, Birmingham.—p. 711.
Tuberculin in Treatment of Bone and Joint Tuberculosis. S. Kleinberg, New York.—p. 722.
Disability Following Injuries to Back in Industrial Accidents. J. W. Sever, Boston.—p. 743.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

October, 1919, **14**, No. 2

*Penetration of Dichlorethylsulphid (Mustard Gas) into Marine Organisms, and Mechanism of Its Destructive Action of Protoplasm. R. S. Lillie, G. H. A. Clowes and R. Chambers, Woods Hole, Mass.—p. 75.
*Effect of Pyretics and Antipyretics on Catalase Production. W. E. Burge, Madison, Wis.—p. 121.
*Drugs After Chlorin Gassing. III. Treatment of Gassed Dogs with Calcium, Quinin and Atropin. H. G. Barbour, New Haven, Conn.—p. 131.
*Local Anesthetics: Do They Precipitate Proteins? T. Sollmann, Cleveland.—p. 135.
Rôle of Bromid Salts on Rhythmically Contracting Organs. I. Action of Bromid on Isolated Mammalian Heart T. Kruse, Columbia, Mo.—p. 137.
II. Action of Bromids on Smooth Muscle. T. Kruse, Columbia, Mo.—p. 149.
Plasma and Blood Clotting Efficiency of Thromboplastic Agents in Vitro and Their Stability. P. J. Hanzlik and C. M. Weidenthal, Cleveland.—p. 157.
Hemostatic Properties of Thromboplastic Agents under Different Conditions. P. J. Hanzlik and C. M. Weidenthal, Cleveland.—p. 189.

Penetration of Dichlorethylsulphid.—The experiments recorded by Lillie and his associates lend strong support to the theory, that "mustard gas" penetrates the cell on account of its organosolubility, and within the cell undergoes hydrolysis, with the liberation of nascent hydrochloric acid, which exerts the destructive effect.

Effect of Pyretics and Antipyretics.—According to Burge, chloroform and ether lower temperature in so far as decreased oxidation is involved in this by decreasing catalase, the enzyme principally responsible for oxidation in the body. The fact that acetanilid, quinin and acetphenetidin have little or no effect in decreasing catalase suggests that their mode of action in lowering temperature is not due to a decrease in oxidation.

Drugs After Chlorin Gassing.—No evidence was obtained by Barbour favorable to the employment of subcutaneous injections of calcium lactate in edema of the lung. Calcium was tested in twenty-three, quinin in eight and atropin in four gassed dogs, without a single recovery.

Do Local Anesthetics Precipitate Proteins?—Sollmann's experiments show that most of the local anesthetics now available do not precipitate proteins, and none did so to a serious degree.

Laryngoscope, St. Louis

November, 1919, **29**, No. 11

Treatment of Gunshot Wounds of Mastoid. H. Neuhof and G. H. Cocks, New York.—p. 615.
Injuries of Nose and Throat, Due to Bullet and Shell Wounds. J. M. Ingersoll, Cleveland.—p. 624.
Foreign Bodies in Air and Upper Food Passages in Pre-Endoscopic Days. H. Arrowsmith, Brooklyn.—p. 633.
Thrombosis of Internal Jugular Vein with Pyemia as a Complication of Retropharyngeal Abscess. H. P. Mosher, Boston.—p. 638.
Nature and Origin of Stammering. E. L. Kenyon, Chicago.—p. 639.
Three Reflex Signs Useful in Examining Ears for Deafness. O. J. Stein, Chicago.—p. 657.
Roentgen-Ray Diagnosis of Acute Mastoiditis in Absence of Mastoid Symptoms. H. M. Hays, New York.—p. 660.

Medical Record, New York

Nov. 1, 1919, **96**, No. 18

*Roentgen-Ray Findings with the Delineator in Cardiospasm. M. Einhorn and T. Scholz, New York.—p. 715.
Mental Diseases. H. Laveson, New York.—p. 717. To be cont'd.
Results of Nonspecific Vegetable Protein Therapy in Cases of Bronchial Asthma. A. Sterling, Philadelphia.—p. 725.
Intraspinous Treatment of Neurosyphilis. C. R. Humbert, Kansas City.—p 726.
Relation of Eye and Ear Disturbances to Disorders of Gastroenteric Tract. J. Katz, Brooklyn.—p. 727.

Roentgen-Ray Findings with Delineator in Cardiospasm.—Einhorn claims that this is the best method for studying

cases of cardiospasm. The delineator string, once swallowed by the patient, may remain in situ for any length of time, outlining permanently the course of the esophagus and reacting even to slight spastic conditions of the organ. In the normal esophagus the course of the string shows a straight line. In the spastic organ the course of the string is more or less tortuous, according to the degree of spasticity. The instrument casts a definite shadow on the fluoroscopic screen as well as on the plate. The patient, therefore, can be examined repeatedly during any period of time, and at the roentgenologist's leisure, without subjecting the patient to the inconvenience of repeated ingestions of contrast mixtures. If necessary, plates can be taken for records.

Nov. 15, 1919, **96**, No. 20

Emotional Unrest, Its Causes and Treatment. S. Paton, Princeton, N. J.—p. 787.
Obstetric Paralysis (Erb's Palsy); Report of Seventeen Cases. S. W. Boorstein, New York.—p. 790.
Aconite in Treatment of Epidemic Influenza. S. G. Strauss, New York. —p. 798.
Absolute Rest as a Metabolic Stimulant. W. H. Porter, New York. —p. 800.
Medical Neologisms of Rabelais. D. W. Montgomery, San Francisco. —p. 801.
*Convenient Method for Concentrating and Isolating Tubercle Bacilli. H. J. Goeckel, Cranford, N. J.—p. 804.

Nov. 22, 1919, **96**, No. 21

A Year of Proteal Therapy. H. S. Williams, New York.—p. 825.
Necessity of Accuracy in Diagnosis of Tuberculosis. M. J. Fine, Newark, N. J.—p. 836.
Treatment of Pandemic Influenza. A. M. Corwin, Chicago.—p. 838.
Homosexuality. C. P Oberndorf, New York.—p. 840.
Hammer Toes. N. A. Ludington, New Haven.—p. 843.

Convenient Method for Concentrating and Isolating Tubercle Bacilli.—Goeckel uses Rice's bromin and alkali reagent (Rice's solution No. 1: Bromin [pure], 1 ounce [30 gm.]; sodium bromid, 1 ounce [30 gm.]; distilled water, q. s. ad. 8 fluidounces [250 c.c.]; Rice's solution No. 2: Sodium hydroxid, 2½ ounces [70 gm.]; distilled water, q. s. ad. 8 fluidounces [250 c.c.]) not only on sputum, but likewise on tuberculous glands. To the sputum, caseous pus, or moderately cut or minced tissues add a few cubic centimeters of the sodium hydroxid solution (Rice's solution No. 2). Mix well and add Rice's bromin solution (No. 1) in successive small portions until a clear liquid is obtained. The use of heat is not necessary. The liquid is then diluted with distilled water to reduce the specific gravity and is centrifuged at high speed to precipitate the bacilli. These are then washed with two successive portions of distilled water, centrifuging to remove the alkali The residue is mounted on a microscopic slide in the usual manner, using a trace of albumin to fix on the slide.

Michigan State Medical Society Journal, Grand Rapids

December, 1919, **18**, No. 12

Varicose Ulcers of Leg. J. Van Becelaere, Detroit.—p. 585.
Typhoid Fever. A. R. Hackett, Detroit.—p. 597.
When Should the Gallbladder Be Removed? W. J. Gillette, Toledo. —p. 602.
Diagnosis of Duodenal Ulcer. J. A. Andries, Detroit.—p. 605.
When Is Sterilization of Women Justifiable? R. Peterson, Ann Arbor.—p. 618.
Serologic Examinations in Eye and Ear Cases. D. M. Campbell, Detroit.—p. 615.
Multiple Fistula of Anorectal Origin; Surgical Solution of Chlorinated Soda; Plastic Skin Flap. E. G. Martin, Detroit.—p. 620.

Modern Medicine, Chicago

December, 1919, **1**, No. 8

Historical Development of Public Health Work in England. A. Newsholme, London, England.—p. 655.
American Public Health Association. C. E. A. Winslow, New York. —p. 663.
Fulfilling the Part of Physical Education in Reconstruction. J. Daniels, Washington, D. C.—p. 667.
Benzol Poisoning. R. P. Albaugh, Cleveland.—p. 670.
*Recognition and Better Treatment for Mental and Nervous Injuries. F. D. Donoghue, Boston.—p. 671.
*Securinig Proper Medical Service for Injured Persons. J. W. Trask, U. S. P. H. Service.—p. 675.
Infections of Upper Extremities. P. A. Pendixen, Davenport, Ia. —p. 679.
Disabilities as Aggravated by Preexisting Conditions. J. W. Mowell, Olympia, Wash.—p. 683.
*Better Methods in Medical Service. F. H. Thompson, Salem, Ore. —p. 688.
How Can Medical Service Be Improved? M. R. Gibbons, San Francisco.—p. 689.
Critical Survey of Public Health Topics. J. Schevitz, Oklahoma City, Okla.—p. 694.
Larger Field in Tuberculosis. A. K. Krause, Baltimore, Md. —p. 697.
An Iowa Enterprise in Medical Service. A. E. Kepford, Des Moines.—p. 714.
Training School of Psychiatric Social Work at Smith College. E. R. Spaulding, Bedford Hills, N. Y.—p. 720.
Present Day Problems in Obstetrics. J. T. Williams, Boston. —p. 731.

Recognition and Better Treatment for Mental and Nervous Injuries.—Donoghue emphasizes the need of calling to the assistance of the compensation boards men competent to diagnose and advise treatment in the psychoses, and through them to encourage the further standardization of this group of cases. The present method of handling them by exerting constant pressure from the insurance physician, insurance adjuster, or compensation commissioner, is not always a success. Nonacceptable work forced on a man tends to develop in him the reaction against work. Forcing a high class man to sweep a floor, may not be treatment; it may be the opposite. The difficulty of the administration of workmen's compensation by lay boards in this group of cases comes down to the unsurmountable fact that there is no specific treatment for hysteria. When a person presents himself he is coming more for relief than for monetary compensation.

Securing of Proper Medical Service for Injured Persons.—Trask outlines the work done by the U. S. Employee's Compensation Commission, its aims and objects, and particularly the requirements of a competent personnel. Physical restoration is accomplished through medical treatment in its broad sense. To be effective it must be competent and adequate. The question of satisfactory medical care for injury cases seems to resolve itself into ascertaining who are competent, well trained surgeons, with the necessary temperamental qualifications, and where they are located,, and then placing the injury cases under their care. The experience of the commission has been that the whole problem depends on the selection of properly qualified surgeons who will conscientiously do whatever is possible toward the physical restoration of their patient.

Better Methods in Medical Service.—In Thompson's opinion, one thing essential to the betterment of the medical service, is the occasional meeting of the county and state medical societies and the presentation of papers that deal with the problems arising between the surgeons and the board. He urges doing away with the hospital contract system that too frequently renders poor service and overcharges the workman.

Neurological Bulletin, New York

August, 1919, **2**, No. 8

Functional Significance and Principal Syndrome of Cerebellum. F. Tilney, New York.—p. 289.

New Jersey Medical Society Journal, Orange

December, 1919, **16**, No. 12

Has the Medical Profession Adequately Met Its Responsibilities? G. E. Tucker, Hartford, Conn.—p. 419.
Surgical Complications of Influenza. P. Correll, Easton Pa.—p. 423.
Plea for Rational Removal of Diseased Tonsils. C. J. Sullivan, New Brunswick, N. J.—p. 425.
Close Relationship Existing Between General Practitioner and Ophthalmologist and Otolaryngologist. T. H. Odeneal, Beverly, Mass. —p. 427.
Medical History of Cumberland County, N. J. T. J. Smith, Bridgeton, N. J.—p. 432.

New York Medical Journal

Dec. 6, 1919, **110**, No. 23

*Causation and Treatment of Rickets. E. Pritchard, London.—p. 921.
Argonne Influenza Epidemic. H. Brooks and C. Gillette, New York. —p. 925.
*Treatment of Climacteric Hypertension. A. H. Hopkins, Philadelphia.—p. 930.
Treatment of Chronic Discharging Ear. H. B. Blackwell, New York. —p. 933.
*Shelley the Invalid. A. A. Moll, Chicago.—p. 934.
Spontaneous Evacuation of Gauze Sponge from Peritoneal Cavity by Way of Bowel. Report of a Case. J. P. Jones, Wakefield, R. I.—p. 941.

Factors of Safety in Prostatic Surgery. M. Meltzer, New York.—p. 942.
Hemoglobinuric Bilious Fever. C. G. Cumston, Geneva, Switzerland.—p. 944.

Causation and Treatment of Rickets.—Pritchard holds the view which is that practically all varieties of malnutrition occurring during infancy and early childhood tend to terminate in rickets, provided they are sufficiently severe or long enough continued. They should not, however, be regarded as evidence of rickets, unless they are actually accompanied by the typical changes in bone which are characteristic of the disease. The essential and central feature of rickets he believes is the want of calcification or mineralization of developing bone, and this in its turn is due to the existence of requirements for calcium which for the time being are more urgent than of developing bone. These urgent requirements are the necessity for neutralizing acid bodies in the blood; in other words, to neutralize or compensate an existing acidosis. In Pritchard's opinion all chronic conditions of malnutrition of whatever kind or from whatsoever cause finally terminate in an acidosis, and that all claims on alkaline bases arising in connection with the neutralization of this acidosis must be satisfied before those of developing bone are attended to. It is in the satisfaction of these claims for alkaline bases that the injury is done to growing bone.

Climacteric Hypertension.—In considering the treatment of climacteric hypertension Hopkins divides the condition into three stages: 1. The first or larval stage in which high blood pressure and nervousness are the chief symptoms. 2. The second stage, in which the pressure is higher and remains more constant and in which the gastric neurosis, cardiac or pressure symptoms, as headache, vertigo, etc., make their appearance. 3. The third stage comes later in life, i. e., in the sixth or seventh decade and represents what might be regarded as the early evidences of senility. The treatment for each stage is described in detail.

Shelley the Invalid.—An analysis of Shelley's writings bearing on his illness has convinced Moll that the poet was suffering from either gastric or duodenal ulcer.

Dec. 20, 1919, **110**, No. 25

*Staphylococcic Bacteriuria. P. Nolf, Brussels, Belgium.—p. 1009.
Fasting Treatment of Diabetes. H. S. Stark, New York.—p. 1010.
Gas Gangrene. B. Jablons, Washington, D. C.—p. 1014.
Relation of Arteriosclerosis to Eye. L. W. Fox, Philadelphia.—p. 1020.
*Industrial Medicine and Surgery an Integral Part of Industry. R. M. Little, New York.—p. 1022.
Rheumatism in Light of Modern Research. H. W. Frauenthal, New York.—p. 1024.
Relation of Malaria to Pregnancy. B. Kaufman, San Francisco.—p. 1028.

Vaccinotherapy of Bacteriuria.—Nolf cites his experience with progressive intravenous vaccination in the treatment of these cases. His results have been very satisfactory.

Industrial Medicine and Surgery.—Little points out the needs of industrial medicine and surgery and suggests how these may be met by the medical profession. He would have a bureau headed by a practical business man who is also a surgeon, and which bureau will prepare, or have prepared pamphlets on the subject of health and the treatment of disease and injuries in clear, nontechnical, forcible language, which pamphlets should be sent to every chamber of commerce, manufacturers' association and trade body in the country. Letters should be sent to all the employers of the country, calling their attention to the necessity of health as a factor in industry and making suggestions concerning the proper organization of a health service in industrial plants. Little would have a roster of able men who can speak effectively on this subject before chambers of commerce, before manufacturers' associations and the leading trade bodies at their annual meetings, and also a roster of well qualified physicians and surgeons who are willing to enter the industrial field, provided suitable conditions and opportunities are open for them. This propaganda and education work should be carried into the medical schools and hospitals of the country in order that the regular medical course may provide training in industrial surgery.

Public Health Journal, Toronto

December, 1919, **10**, No. 12

Epidemic Pneumonia. A. G. Nicholls, Halifax, N. S.—p. 537.
Statutory Practice. A. E. Forbes, Maccan, N. S.—p. 547.
Nineteenth Annual Report of Executive Council of Canadian Association for Prevention of Tuberculosis. G. D. Porter, Ottawa.—p. 551.
Plan for a More Effective Federal and State Health Administration. F. L. Hoffmann, Newark, N. J.—p. 557.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine and Parasitology, Liverpool

Dec 10, 1919, **13**, No. 3

Coincident Malaria and Typhoid. H. H. Scott, London.—p. 195.
*Metabolism of White Races Living in Tropics; II. Composition of Urine. W. J. Young.—p. 215.
Endemic Tsutsugamushi Disease of Formosa. J. Hatori.—p. 233.
Bionomics of Stegomyia Fasciata. J. W. Fielding.—p. 259.
Ancylostoma Ceylanicum in the cat in Durban. B. Blacklock.—p. 297.

Urine of White Races Living in Tropics.—The twenty-four hours' urine collected from a number of persons living in North Queensland and of different occupations was analyzed by Scott. The daily average volume was only 784 c.c. This volume was increased considerably in the cooler weather. The specific gravity was very much higher, while the freezing point did not differ very much from that found in Europe, thus the osmotic pressure was not very much higher. A striking difference was noticed in the quantity of sodium chlorid excreted in the urine, which was very low, and this may be accounted for by the large loss of water in the sweat which carries with it this salt. It is calculated that a man doing manual labor in the tropics must lose several grams of sodium chlorid per day through the skin, which would readily account for the deficiency in the urine. The total nitrogen showed a lower figure than that found in Europe, which cannot be accounted for by loss of nitrogen from the skin, since it is shown that this can only amount to 1 or 2 gm. per day under normal circumstances. These results differ from those obtained by other observers in other parts of the tropics.

British Journal of Surgery, Bristol

October, 1919, **7**, No. 26

Specimens of Gunshot Injuries of Long Bones. A. Keith and M. E. Hall.—p. 149.
*Compression of Lower Trunk of Brachial Plexus by a First Dorsal Rib. J. S. B. Stopford.—p. 168.
*Traumatic Myositis Ossificans Resulting from Gunshot Wounds. J. Morley.—p. 178.
*Paget's Disease of Nipple. W. S. Handley.—p. 183.
*Operation for Exophthalmic Goiter. T. P. Dunhill.—p. 195.
*Repair of Bone. W. E. Gallie and D. E. Robertson.—p. 211.
Physiologic Pathology of Gunshot Wounds of Head. G. Jefferson.—p. 262.
Case of Large Splenic Cyst; Splenectomy. E. E. Maples.—p. 290.
Shell Wound of Small Intestine: Resection. Recovery. W. Tyson.—p 292.
Gas Cyst of Thigh from Foreign Body Retained After Shell Wound. F. J. Tees.—p. 293.

Nerve Compression by First Dorsal Rib.—Ten cases of this type were seen by the authors in less than two years. Eight of these are described as belonging to the idiopathic group, while two were of traumatic origin. In all the ten cases, except one (and that was a very early one), objective sensory disturbances were present, and in all the nine cases, loss of protopathic sensibility was greater than the epicritic loss—a dissociation which Stopford has previously suggested as characteristic of nerve compression. Trophic and vasomotor phenomena were very constant, the most frequent being hypothermia, pallor or cyanosis, and trophic sores affecting the little and ring fingers and more rarely the inner border of the forearm. There does not appear to be any advantage in subdividing the cases into the three types—motor, sensory and trophic disturbances in the hand and forearm may be and sympathetic—according to which group of symptoms predominates, provided it is remembered that weakness of the hand, objective and subjective sensory manifestations,

the result of compression of the lower trunk by a first thoracic rib as well as by a supernumerary costal element.

Traumatic Myositis Ossificans.—Morley draws attention to the fact that gunshot wounds, and particularly shell wounds, which graze tangentially the smooth shaft of such a bone as the femur, may give rise to a growth of bone in the adjacent muscles precisely similar to the familiar myasitis ossificans that follows a subcutaneous trauma. He also points out the value of this fact as evidence of the true nature of the process.

Paget's Disease of Nipple.—The nature of this disease is discussed at length by Handley, and he finally concludes that the probabilities all favor the view that the lymphatic obstruction which is the cause of Paget's eczema results from neoplastic and not from mere inflammatory obstruction of the lymphatics. Even if in rare cases it is possible that the eczema results from a block in the lymphatics of inflammatory origin, it is certain that this form of chronic inflammation of the ducts is a very dangerous condition which almost invariably leads to carcinoma. Paget acknowledged that in all cases in which he excised the eczematous nipple a carcinoma subsequently appeared in the breast. Early and complete removal of the breast is, therefore, demanded whatever the view adopted as to the order in time of the eczema and the carcinoma.

Operation for Exophthalmic Goiter.—In operating on the thyroid for exophthalmic goiter, Dunhill insists that only so much gland tissue should be removed as is necessary, but that this must be done even if more than one or even three operations should be performed. He is convinced that one cause of failure is leaving gland tissue which should have been removed cleanly, i. e., the posterior surface of the first lobe ,or portion of the isthmus, attached to the trachea. Small portions such as these always grow and function, and they cannot subsequently be dug out of their surrounding scar tissue without great difficulty. "What you remove, remove cleanly; what you leave, leave undisturbed. See that the portion left has always its blood supply intact. Failures are due to leaving too much gland behind." Dunhill prefers to operate under local anesthesia.

Repair of Bone.—Gallie and Robertson have made a complete review of the literature on the repair of bone, and performed a large number of experiments on animals in trying to arrive at a definite conclusion. They are of the opinion that periosteum is not osteogenetic, and should not be depended on under any circumstances to assist in the production of new bone. The presence or absence of the periosteum in autogenous bone transplants has no decided influence on the activity of the subperiosteal osteoblast, and is of no practical clinical importance. The periosteum is of great importance, however, from a clinical standpoint, because of its control of the circulation throughout living bone. Extensive stripping of the periosteum at operation will result in necrosis, which may cause delay in the union of aseptic fractures, and which will result in sequestration where sepsis is present. Disturbance of the circulation should be reduced to a minimum in all operations on bone. The method of new bone growth and other points of interest in connection with bone repair are discussed fully.

Edinburgh Medical Journal

December, 1919, **23**, No. 6

Relation of Chemistry to Medicine. G. Barger.—p. 350.
Technic of Blood Transfusion. J. M. Graham.—p. 358.
Position of General Hospital in a Regional Survey. N. Burnett.—p. 387.

Indian Medical Gazette, Calcutta

November, 1919, **54**, No. 10

Midwifery Impressions. J. R. Roberts.—p. 401.
*Successful Cholera Prophylactic Vaccination: An Experiment in a Village During an Epidemic. A. Roy.—p. 404.
*Economic Value of Anticholera Inoculation. T. C. McC. Young.—p. 407.
Diabetes in Madras. S. K. Aiver.—p. 410.
*Case of Ophitoxemia—Snake Poisoning (Echis Carinata); Recovery. D. J. Asana.—p. 412.
Paka Oil in Mustard Oil as an Adulterant. R. C. Bose, and S. N. Sen.—p. 413.
Surgical Emphysema Complicating Influenza. I. C. Aich.—p. 418.
*Case of Hydatid Cyst. G. M. Butt.—p. 419.
Case of Ectopic Gestation Which Burst into Rectum. E. B. Wolf.—p. 419.

Anticholera Inoculation.—Roy and Young report very favorably on the use of anticholera vaccines in the prevention of cholera. Even under the most unfavorable circumstances, as existed in one village, Roy succeeded in checking an extensive epidemic after all other measures had failed.

Ophitoxemia.—In Asana's case the treatment consisted in cleaning the bitten part, the application of antiseptic dressings, calcium chlorid in 10 gm. doses, every three hours, 0.33 gm. emetin hydrochlorid morning and evening hypodermically, and alum gargles for the mouth as often as possible. The treatment was continued for four days. On the eighth day the patient was well.

Abdominal Hydatid Cyst.—Butt removed an intra-abdominal hydatid cyst measuring 5½ inches in diameter from his patient. The cyst arose from the peritoneum.

Journal of Laryngology, Rhinology and Otology, London

December, 1919, **34**, No. 12

*Tongue Holder and Depressor for Tonsillectomy. J. Donelan.—p. 477.
Cases of Maxillary Antrum Disease. W. S. Syme.—p. 478.
Complications of Chronic Middle Ear Suppuration. J. S. Fraser and W. T. Garretson.—p. 480.
Case of Aural Bacteremia. R. Webber.—p. 499.

Tongue Holder and Depressor for Tonsillectomy.—Donelan's instrument consists of a tissue forceps on the back of which a fenestrated tongue depressor is fixed. The patient being in the supine position, with head retracted over a sand pillow, the points of the forceps are inserted transversely and well back in the dorsum of the tongue. The tongue is then gently drawn forward by the anesthetist, and at the same time the dorsum is depressed in such a way as to free the respiratory passage and completely expose the field of operation.

Journal of Pathology and Bacteriology, Cambridge

October, 1919, **23**, No. 1

Experiments on Action of Unsaturated Fatty Acids and Lipoids on Amylolytic and Hemolytic Phenomena. P. Stocks.—p. 1.
*Modified Wassermann Test. C. Y. Wang.—p. 15.
*Biochemistry of Pathogenic Anaerobes. VIII. J. E. G. Harris.—p. 30.
*Paths of Spread of Bacterial Exotoxins with Special Reference to Tetanus Toxin. F. H. Teale and D. Embleton.—p. 50.
Macroscopic Appearances of War Injured Nerves. S. M. Cone, M. C., U. S. Army.—p. 69.
Protozoal Parasites of Rat; the Rat as a Natural Reservoir of Spirocheta Icterohemorrhagiae. A. G. R. Foulerton.—p. 78.
Squamous Epithelioma Involving the Frontal and Superior Maxillary Sinuses in a Mare. J. F. D. Tutt.—p. 104.
Ectopia Cloacae. C. Walker.—p. 109

Modified Wassermann Test.—In the method described by Wang the technic is simple, consisting in the mixing, in loopfuls, of an antigen with the suspected serum and the sensitized corpuscles, all at one and the same time. The blood required for the test is available from a prick and collected in small capillary tubes, such as those used for the Widal test. The examination need not be undertaken almost at once, as in Birt's test, but may be delayed to the third day, or perhaps even longer, after the sample has been taken. The test is said to be superior to the Wassermann.

Biochemistry of Pathogenic Anaerobes.—Experimental methods are described by Harris for carrying out a comparison of the biochemical reactions of two closely allied organisms. Details are given of the apparatus used for fermentation experiments, and of the methods for obtaining values for gas production, ammonia and amino-acid formation, production of volatile acids, and changes in hydrogen ion concentration and sugar content. A simple method is described for determining the degree of oxygen toleration of organisms for routine purposes; it is suggested that results should be expressed in the form of the "aerobic index," which is defined. A comparison is made of two anaerobes —*B. sporogenes* and the Reading bacillus—which, morphologically and in cultural reactions, are closely related. The

results are given of fermentations on five different mediums, and of determinations of the aerobic indices both of spores and young organisms on liquid and solid mediums. From the experimental results it is concluded that these two organisms are of the same race, but show small differences, possibly acquired. In their biochemical behavior toward the five mediums used, they are remarkably similar, but they show a somewhat striking difference in their powers of growing in the presence of oxygen. The use of methods, such as those described, for investigations of the biochemical properties of bacteria in general, is discussed, and a means is suggested for using these methods with aerobic organisms.

Paths of Spread of Bacterial Exotoxins.—The experiments recorded by Teale and Embleton show that although tetanus toxin ascends to the central nervous system by way of the axis cylinders of the nerves, it also to a very great extent passes up the nerves to the cord by way of the perineural lymphatics. Blocking of the latter paths greatly delays and in some cases completely prevents the occurrence of tetanus in the part corresponding to the nerve whose lymph path has been blocked. Although tetanus toxin passes rapidly from the blood vessels into the connective tissue spaces and thence to the thoracic duct, the toxin does not pass from the capillaries of the central nervous system to the tissues thereof. Tetanus toxin does not pass from the choroidal plexus to the cerebrospinal fluid. Although bacteria can pass through the posterior root ganglion to the cord, colloidal pigments and tetanus toxin are prevented from doing so. Iodin, although it prevents tetanus toxin from producing its characteristic effects when iodized toxin is inoculated subcutaneously or intravenously, does not affect the toxin when inoculated intracerebrally, it does not hinder the occurrence of the typical symptoms of cerebral tetanus, and there is no apparent diminution in its toxicity. Tetanus antitoxin does not pass to the central nervous system either by way of the blood vessels, axis cylinders, or neural lymphatic channels. It also cannot pass from the cerebrospinal fluid into the substance of the cord when inoculated intrathecally. The antitoxin simply acts by combining with the circulating toxin at the seat of production, and prevents it from reaching the central nervous system. The toxin already in this position is unaffected.

Journal of Tropical Medicine and Hygiene, London

Dec. 1, 1919, **22**, No. 23

Case of Bronchospirochetosis (Castellani's Bronchitis). W. Broughton-Alcock.—p. 213.

Seale Hayne Neurological Studies, London

August, 1919, **1**, No. 5

Obsessions. R. G. Gordon.—p. 235.
Hysterical Contractures. A. F. Hurst—p. 244.
Studies in Hysteria. XI. Suggestibility and Its Relation to the Psychology of Hysteria. R. G. Gordon.—p. 264.
Organic Basis of Neurasthenia. Two Cases Presenting Symptoms of Addison's Disease. A. F. Hurst.—p. 272.
Dissociation of Physical Signs of Organic Lesions of Pyramidal Tract. A. F. Hurst.—p. 276.
Hysterical Deafness; Auditory Motor Reflex and Psychology of Hearing. A. F. Hurst.—p. 279.
Case of Cerebral Abscess, Probably Influenzal in Origin. J. Culross and A. F. Hurst.—p 290
Hysterical Amnesia of Fourteen Months' Duration Cured at a Single Sitting by Hypnosis S. H. Wilkinson.—p. 293.
Case of Hysterical Pain and Vomiting Following Appendicitis, with Relapses. R. G. Gordon.—p. 294.
Hysterical Symptom of Forty Years' Duration. R. G. Gordon.—p. 296.

Bulletin Médical, Paris

Nov. 29, 1919, **33**, No. 53

*The Physiopathology of Jaundice. M. Brulé.—p. 709.
*System for Clinical Examination in Cases of Jaundice. F. Saint-Girons.—p. 713.
*Diagnosis of Jaundice. P. Ameuille and R. Huguenin.—p. 717.
*Icterohemorrhagic Spirochetosis. P. Pagniez.—p. 720.

Physiopathology of Jaundice.—Brulé reiterates that besides hemolytic jaundice—which calls merely for iron and possibly splenectomy—discovery of dissociated retention of bile salts shows that the jaundice is due to insufficiency in liver functioning and not to mere obstruction of the biliary passages, from within or without. Recent research has confirmed that infectious jaundice in the great majority of cases is the manifestation of disease in the liver, and hence operations, cholagogues and measures to clear out and disinfect the biliary passages are useless when the stoppage of the course of the bile is in the liver itself. Treatment should aim to fortify and facilitate the task of the liver; ingestion of sugar, for example, promotes the glycogen function. Although therapeutic efforts in this line have been very imperfect to date, yet our increasing knowledge of the physiopathology of jaundice will certainly some day aid in corresponding improvement in its treatment.

Examination in Cases of Jaundice.—Saint-Girons devotes over four pages to the systematic outline of the questions to be asked in the clinical examination and the interpretation of the findings. Ameuille and Huguenin give a similar systematic outline and technic for the laboratory tests to complete the clinical diagnosis.

Icterogenous Spirochetosis.—Pagniez had only 15 per cent. typical forms in his 45 cases of icterogenous spirochetosis in the Aisne district in the summer of 1917. The catarrhal jaundice type was encountered in 10 or 12 per cent. In 2 cases there was no jaundice with the spirochetosis, the meninges bearing the brunt of the attack. In 4 cases the meningeal syndrome preceded the jaundice. No really active antiserum seems to have been produced to date. Arsphenamin has given no results, and this medication, he says, has been completely abandoned. Lumbar puncture relieves the pain in the meningeal form but the danger in the graver cases is mostly from the kidneys. Hence abstention from nitrogenous food and repeated venesection are indispensable to enable the patient to resist the intoxication until kidney functioning becomes reestablished.

Bulletins de la Société Médicale des Hôpitaux, Paris

Nov. 7, 1919, **43**, No. 31

Hemiplegic Amyotrophic Lateral Sclerosis. Marie and others.—p. 925.
*Neo-Arsphenamin in Contractures and Spasms. M. Sicard.—p. 930.
*Gall by Rectum in Constipation. R. Bensaude and M. Vicente.—p. 932.
*Dehydration of Pancreas in Coma. Chauffard and Grigaut.—p. 939.
*Peritoneal Symptoms in Acute Pneumococcus Infection. C. Flandin, M. Debray and F. Françon.—p. 943.
Acute Poliomyelitis in Adult. P. Marie and A. Léri.—p. 949.
*Roentgenoscopy of the Viscera after Intra-Abdominal Injection of Oxygen. L. Ribadeau-Dumas, Mallet and de Laulerie.—p. 952.

Neo-Arsphenamin in Treatment of Contracture and Spasms.—Sicard relates that the by-effects of neo-arsphenamin on the nervous system can be utilized in direct treatment of certain nervous disturbances in both syphilitics and non-syphilitics. The arsenical inhibition may range from a simply sedative effect to abolition of all reflex action in the legs, depending on the dose and the way the drug is pushed; small injections by the vein every day or two are more potent than a weekly injection. The Achilles reflex has not returned during the fifteen months to date in some of his cases. This by-effect of arsphenamin may lead to the mistaken assumption of impending tabes unless the normal findings in the spinal fluid are taken into account, as also the electric responses, knee jerk and pupil reactions. A sedative influence on contractures and in chorea was evident after 4 or 5 gm. of neo-arsphenamin had been thus administered in the course of five or six weeks. This hitherto misinterpreted property of the drug can thus be utilized in many cases of pathologic nervous conditions, under control of the skin, nerve and azotemic reactions

Bile by the Rectum in Treatment of Constipation.—Bensaude and Vincent have been amazed at the way in which beef gall (10 gm. extract of beef gall in a liter of water) started up peristalsis twelve hours after ingestion of a contrast meal. When the bile enema was given the opaque mass was in the ascending colon. It passed rapidly along and was expelled the fifth minute. This amount of the gall extract caused griping, but 5 gm. proved equally effectual without inducing colic. Various preparations of beef gall were tried, but 4 or 5 gm. of the powder form, that is, two teaspoonfuls in 250 gm. of tepid water, is the most convenient method. The gall does not seem to lose its efficacy in time, according to their several months of experience. They review the history

of the use of bile in medicine, beginning with the Egyptian papyrus thirteen centuries B. C. which among various prescriptions for enemas gives: "Beef gall ⅓; cow's milk ⅔. Usually cures in four days. A good remedy."

Dehydration of the Pancreas in Diabetic Coma.—Chauffard and Grigaut have long noted the extreme dehydration of the organs in diabetic coma, most pronounced in the pancreas. In a recent case, even the spinal fluid was thick and syrupy, and the coefficient of dehydration in the pancreas was 170 per thousand. Examination of the pancreas from diabetics and others succumbing to causes other than coma showed normal hydration of the pancreas.

Abdominal Reactions in Pneumococcus Septicemia.—In the case reported, the signs of grave general infection were accompanied by intense abdominal pain and extreme distention of the intestines with complete arrest of stools and flatus. There were no symptoms from the lungs, and an exploratory laparotomy showed no signs of peritonitis. The young woman died the seventh day. In another case the acute peritoneal reaction developed during convalescence from pneumonia. A suppurating joint lesion may have aided in the recovery, acting like a fixation abscess. Other cases are cited in which the course tended to suppuration, diffuse and fatal in some, or localized, with recovery. The relief was usually great as soon as a suppurating focus developed. Pneumococcus pus does not seem to be spontaneously resorbed and requires surgical measures.

Roentgenoscopy After Injection of Oxygen.—Ribadeau-Dumas expatiates on the remarkable precision with which the viscera can be inspected after intraperitoneal injection of a liter or two of oxygen. He changes the patient's attitude until the viscus shows best on the screen, and then roentgenographs it.

Nov. 14, 1919, **43**, No. 32

*Diabetes and Exophthalmic Goiter. M. Labbé.—p. 955.
*Parotitis in Cerebrospinal Meningitis. Serr and Brette.—p. 962.
*Duodenal Ulcer with Ptosis. A. Durrieux and Parturier.—p. 966.
*Spontaneous Rupture of Aorta. Menetrier and Durand.—p. 968.

Diabetes and Exophthalmic Goiter.—Labbé describes the five cases he has encountered of this combination. The glycosuria in this thyroid diabetes seems to be more resistant and less dependent on the diet than in ordinary diabetes. In one of his cases the woman developed goiter at 20; glycosuria became installed at 50, and at 54 the symptoms of severe exophthalmic goiter developed and the diabetes became aggravated. Each time there was a hyperthyroid attack, with tachycardia, the sugar content of the urine and blood ran up high, scarcely modified by dietetic measures, but subsiding with the paroxysm of hyperthyroidism. He cites Manby, Lancereaux and others' reports of instances of diabetes in some members of a family and exophthalmic goiter in others. Diabetics with exophthalmic goiter seem to display an exceptional tendency to acidosis, probably from the derangement in nitrogen metabolism which is constant in exophthalmic goiter. He adds that the action of drugs also tends to individualize this form of diabetes; drugs like quinin and salicylate, which act on the goiter, modify likewise the glycosuria. In two of the cases described, treatment with iodin proved effectual; at the same time that the palpitations and tachycardia subsided, the glycosuria declined also. His five cases show the multiplicity of types which the diabetes may assume in these cases. A number of writers have called attention to the frequency of alimentary glycosuria in *basedowiens*. In the discussion that followed, Garnier related that when feeding animals suprarenal extract, a much higher degree of glycosuria was realized when thyroid extract was associated with it than when the suprarenal extract was given alone. Linossier commented on the exceptionally high alimentary glycosuria in some cases of exophthalmic goiter, but this does not occur in all. It is evident that in some cases the interaction of other glands may maintain a functional balance.

Parotitis in Meningitis.—The meningitis was declining in the two young men when the parotitis flared up.

Differential Diagnosis of Duodenal Ulcer.—The predominant symptom presented by the man of 32 was constantly recurring intense dizziness, evidently from the upper digestive tract. The pains suggested duodenal ulcer, and this was confirmed by the constant painful point, at the middle of a line from the umbilicus to the tenth rib, not varying during inspiration or change of position. There was also a remote painful point at the left, between the two heads of the sternocleidomastoid muscle; Parturier has already called attention to this referred pain at this point as an aid in diagnosis of abdominal disease. Still further aid in the diagnosis was afforded by the elective action of belladonna in relieving the pain, while it was not modified by opium, which is so effectual with disease in the biliary apparatus. The stomach in this case sagged 8 cm. below the crest of the ilium.

Spontaneous Rupture of the Aorta.—The woman of 43 was syphilitic, and necropsy disclosed changes in the middle layer of the aorta which were of a different type from the specific arteritis hitherto described.

Médecine, Paris

November, 1919, **1**, No. 2. Syphilis and Skin Disease Number

*Recent Progress in Skin Diseases and Syphilis. Gougerot.—p. 69.
*Phthiriasis as a Symptom. E. Jeanselme.—p. 79.
*Serodiagnosis of Skin Diseases. E. Joltrain.—p. 81.
Joint Disease in Psoriasis. L. Bory.—p. 85.
Eczema a Defensive Reaction. H. Gougerot.—p. 87.
*The Herxheimer Reaction. G. Milian.—p. 91.
*Syphilitic Meningitis. M. Bloch.—p. 92.
Syphilitic Vitiligo. A. Touraine.—p. 97.
*Syphilitic Exophthalmic Goiter. A. Lévy-Franckel.—p. 99.
*Raynaud's Disease and Syphilis. L. Giroux.—p. 100.
*Drop in Blood Pressure under Arsenic. A. Touraine.—p. 103.
*Practical Points. H. Gougerot and others.—p. 104.

Recent Progress in Skin Disease and Syphilis.—Gougerot reviews the achievements during the war in this line, mentioning Sicard's rachialbuminimeter to measure the albumin in the cerebrospinal fluid. He says that arsenical treatment has modified syphilis so that it may enter the tertiary stage from the start; lesions of all three phases have been known to develop together of late. Syphilis represents a blending of immunity and sensitization, and there may be all forms of transitions between the complete, though retarded, secondary explosion and latent syphilis. This warns that the cure may be deceptive; several instances of supposed reinfection have proved to be merely delayed manifestations. "No new sign or method of treatment has been discovered, and the confidence in the Wassermann test is not so blind as formerly." Gougerot adds "We no longer count the cases of deaths and accidents from 914; among the more impressive was Leredde's patient dying with a purpuric syndrome after the twenty-third injection; Courtoix-Suffit's dying in the physician's office after the eighth injection, and the soldier, dying from paraplegia (Gougerot)." He is inclined to ascribe the mishaps mainly to toxic action from the arsenic plus symptoms from the accelerated "tertiarization" of the disease under the drug. In conclusion he reiterates that a syphilitic may be contagious even when he has no lesions or only tertiary manifestations. Also that a syphilitic may reinoculate himself, and that inherited syphilis does not immunize against new contagion.

Infestation with Lice as a Symptom of Disease.—Jeanselme has repeatedly noticed that the perfectly healthy may escape phthiriasis even when sleeping with lice-infested persons. The lice colonize by preference on the diseased, and hence severe phthiriasis should impel a search for serious, possibly latent disease.

Serodiagnosis in Skin Diseases.—Joltrain expatiates on the facility and reliability of serodiagnostic measures applied to leprosy, mycosis and other skin diseases, although his experiences to date with skin cancers have been conflicting.

The Herxheimer Reaction.—Milian explains anew that the inflammatory reaction in the syphilitic tissues under the influence of specific treatment, known as the Herxheimer reaction, is the cause of jaundice, albuminuria and other symptoms which have been mistakenly ascribed to direct toxic action from the medication.

Syphilitic Meningitis.—Bloch argues that what we have been calling "neurorecurrences" and "meningorelapses" are in reality the paroxysmal flarings up of an inadequately

treated meningovascularitis. When the Wassermann reaction persists positive after vigorous treatment, the possibility of this must be borne in mind. Local intraspinal medication has given good results.

Syphilis and Exophthalmic Goiter.—Lévy-Franckel was one of the first (1911) to report improvement or the cure of exophthalmic goiter under treatment for suspected or certain syphilis. The exophthalmic goiter may be the precursor of tabes, and he has accumulated data to confirm that syphilis may be responsible not only for exophthalmic goiter but also for various pluriglandular syndromes.

Raynaud's Disease and Syphilis.—Giroux regards Raynaud's disease as often merely a manifestation of syphilitic disease of the arterioles.

Drop in Blood Pressure Under Arsenical Treatment.—Touraine warns that the "nitritoid crisis" is the result of the depressing influence of the arsenic on the blood pressure, saying that it can be easily warded off with epinephrin. The amount should be graduated to the dose of the arsenical preparation. His formula is one fourth as many milligrams as of centigrams of the arsenic.

Minor Practical Points.—Among those mentioned are the danger from intraspinal treatment in tardy syphilis. Tzanck emphasizes that a subarachnoid injection is practically merely an intralymphatic injection, all the drug being soon refound in the thoracic duct. On the other hand, an axis cylinder that has been touched with syphilis is more vulnerable than under other conditions. At most, he endorses injecting the drug by the vein, withdrawing lumbar puncture fluid at the same time. With tenacious secondary meningitis, however, intraspinal injections, he declares, are harmless and effectual.

Presse Médicale, Paris

Dec. 3, 1919, **27**, No. 73

*Cystoradiography. F. Legueu and E. Papin.—p. 733.
*Stretching of the Liver with Gallstones. M. Goullioud.—p. 735.

Bladder Radiography.—Legueu and Papin express surprise that the technic for pyelography has not been applied more systematically to the bladder. They have been using this cystoradiograhy, as they call it, since their publication on the subject in June, 1912, but found no reference to this method in the literature until Kelly's work in March, 1913. They have injected air, oxygen, bismuth, etc., but have found thorium sulphate or nitrate the best substances for the purpose. Thorium nitrate forms a solution which is not irritating or toxic, does not stain, and is less expensive than silver salts, etc. If a radiograph is taken of the bladder filled with the fluid, and then again after the bladder is emptied, any diverticulum shows up plainly, and this may explain the failure of persevering treatment, when cystoscopy has failed to reveal it. In one case two diverticula were thus revealed which had long maintained suppuration. Six instructive radiograms are given to show the different aspects of various lesions. A large tumor projecting into the contrast fluid renders the shadow within its outlines much lighter. In some cases the ureter mouth was gaping and the contrast fluid spread up through the congenitally dilated ureter, sometimes even into the pelvis.

Elongation of the Liver.—Goullioud describes with illustrations what he calls the *languette hépatique*, or tongue-like projection of the liver, secondary to congestion and retention of bile from severe gallstone trouble, the heavy organs dragging on the liver, with extension to the liver of the processes of sclerosis. The corset may be an additional factor, but this localized hypertrophy of the right lobe of the liver has been found in men. It usually accompanies grave surgical gallstone disease and is an important sign of the latter. In any event, it should not be mistaken for the distended gallbladder.

Gazzetta degli Ospedali e delle Cliniche, Milan

Oct. 16, 1919, **40**, No. 83

*Magnesium Sulphate in Spasmophilia and Whooping Cough. G. Genoese.—p. 891.

Magnesium Sulphate in Spasmophilia and Whooping Cough.—Genoese gave intramuscular injections of a 25 per cent. solution of magnesium sulphate in four cases of severe spasmophilia and in four of severe whooping cough. No benefit from the injections was apparent and no purgative action followed. The drug increased diuresis, and he ascribes to its rapid elimination through the kidneys the lack of any appreciable effect on the nervous system.

Oct. 19, 1919, **40**, No. 84

Malaria during the War. P. Finizia.—p. 901. Conc'n in No. 85, p. 915.

Oct. 30, 1919, **40**, No. 87

*Eruption from Contact with Spoiled Grain. G. Romiti.—p. 941.

Eruption from Contact with Spoiled Grain.—Romiti reports several epidemics since 1915 of a papulous, eruptive dermatosis, with intense itching and high fever for from six to twelve hours. Only those persons were affected who had carried or otherwise handled grain subject to a special pathologic process, requiring the so-called scalding, or had handled flour from such grain, or clothing that had been in contact with it. In some cases the febrile eruption returned several times in succession, at intervals of three, five or seven days. Treatment was restricted to removal of the cause, hot baths and symptomatic measures.

Policlinico, Rome

Oct. 26, 1919, **26**, No. 43

*U Incision for Abdominal Wall. G. Ruggi.—p. 1253.
*Reflex Dysmenorrhea with Ozena. I. Dionisio.—p. 1262.
*Mercury by the Vein in Grave Infections. S. Mello.—p. 1263.
Calcium Salts in Local Tuberculous Processes. Silvestri.—p. 1266.
Prophylaxis of Goiter in Italy. G. Pighini.—p. 1267.

U Laparotomy Incision.—Ruggi says that he was the first to make a transverse abdominal incision (published in 1890), and he now lauds the advantages in certain conditions of a large reversed U incision, the arms starting 4 cm. above the middle of the inguinal fold, and the curving line crossing the abdomen about 6 cm. above the umbilicus. This allows a broad flap to be turned back on the pubis. He explores the abdomen thus widely opened up, proceeding from the sound portions to the more pathologic areas. It answered requirements to an unexpected extent in a case described in which there were two fecal fistulas left from a gunshot wound.

Reflex Action from Ozena.—As the ozena subsided under treatment, the complete cure of the associated disturbances confirmed their reflex character. They included headache, nocturnal enuresis, tenesmus of the bladder, and dysmenorrhea.

Mercury by the Vein in Grave Disease of the Blood.—Mello as a last resort in three cases of puerperal or typhoid or other fever injected 2 or 3 mg. of mercuric chlorid by the vein twice in one day, and then for two days 4 mg. twice, and the apparently moribund patients recovered.

Nov. 2, 1919, **26**, No. 44

*Pseudo-Ileus from Ureter Calculus. C. Frugoni.—p. 1285.
*Fontana Stain for the Pale Spirochete. L. Nardelli.—p. 1288.
Aneurysm of the External Iliac. A. Venturi.—p. 1297.
Serotherapy of Malta Fever. S. Spampinato.—p. 1299.

Pseudo-Ileus from Calculi in Ureters.—Frugoni reports three cases of this kind, the obstruction of the bowel stopping when the impacted calculus in the ureter was finally passed along. There is usually a history of more or less suggestion of kidney colics, and the cramps develop suddenly, diffuse or localized in colon or rectum, with tenesmus and pains suggesting a rectal tabetic crisis. The abdomen becomes distended and tender, and there is no passage even of flatus. A tendency to hydronephrosis clears up the diagnosis at once. Micturition is not modified but there is microscopic hematuria. The complete arrest of flatus and stools does not usually last more than two or three days, and then the symptoms subside as the calculus drops into the bladder or is expelled. In two of the cases reported his diagnosis saved the patients from a needless operation. The general aspect is less grave than with actual intestinal ileus; vomiting is rare and less insistent; the rectal tenesmus is accompanied by lancinating pains, and the meteorism is rapid and diffuse, without partial or segmental peristalsis.

Archivos Latino-Amer. de Pediatría, Buenos Aires

July-August, 1919, **13**, No. 4

Report of Child Welfare Section of Public Health Service of State of S. Paulo. C. Ferreira.—p. 321.
Annual Report of Pediatric Society. C. Pelfort.—p. 351.
*Multiple Fractures in Twelve Day Babe with Inherited Syphilis. S. Satanowsky.—p. 361.
*Infectious Purpura in Boy of Six. F. C. Garzón.—p. 369.
*Foreign Bodies in Children. J. C. Munyo.—p. 373.

Spontaneous Fractures in Young Infant.—Satanowsky describes a typical case of osteogenesis imperfecta which had entailed multiple and spontaneous fractures from the first day after birth and onward. The enlarged spleen subsided promptly to normal size under treatment for the inherited syphilis but the defective bones showed no change. Radiography shows less calcium salts than normal and that their distribution is irregular. The periosteum is not adherent to the bone below and the compact bone is much thinner than usual. At the age of 6 months the child was unable to sit up, and during a bath, the humerus fractured on both sides and the tibia on one, and the child died the next day, with fever. The ductless glands were of normal aspect.

Infectious Purpura.—In Garzón's case the boy of 6 presented a series of inflammatory foci in bone, extremely tender, but disappearing rapidly and spontaneously, and without a trace of fever at any time. The multiple accompanying ecchymoses and petechiae confirmed the presumptive diagnosis of infectious purpura. The child a few months before had required two operations for a traumatic abscess in the parietal region of the skull. The infectious purpura ran its course in a little less than a month.

Foreign Bodies in Children.—Munyo describes the extraction of a foreign body drawn into the trachea and three esophagus cases.

Brazil-Medico, Rio de Janeiro

Jan. 11, 1919, **33**, No. 2. Received Dec. 26, 1919

Bovine Babesiasis and Anaplasmosis. H. de Beaurepaire de Aragão.—p. 9.
Acquired Feeblemindedness. H. de Brito Belford Roxo.—p. 10. Concluded in No. 3, p. 17.

March 29, 1919, **33**, No. 13

Estimation by Opacity of Doses for Vaccine Therapy. A. Marques da Cunha and Cassio Miranda.—p. 97.
Syphilitic Fever. J. C. Ferreira.—p. 97. To be cont'd.
Phenomena after Experimental Injection of Nicotin. M. Ozorio de Almeida.—p. 101.

Gaceta Médica de Caracas

Oct. 15, 1919, **26**, No. 19

Treatment of Appendicitis. J. C. Rivas Morales.—p. 199.
*Cysts in the Liver. R. Soto G.—p. 200.

Liver Cysts in Venezuela.—As a contribution to the debated question whether hydatid cysts occur in Venezuela, Soto describes a case of a solitary nonparasitic cyst in the liver and remarks that the turbid contents and the site differentiate these solitary cysts from hydatid cysts. The solitary cyst is generally accompanied by other congenital anomalies, and always with anomalies in the liver itself. His patient was a multipara of 46, and the abdomen was opened on the assumption of gallbladder disease. There had been symptoms from the liver cyst for fifteen years, and four punctures recently had evacuated 1 or 2 liters of fluid resembling bile at first, and later purulent. He was unable to remove the capsule of the cyst, as he attempted, and merely drained it after suturing it to the lips of the incision.

Medicina Ibera, Madrid

Nov. 8, 1919, **9**, No. 105

*Operative Treatment of Prolapse of the Uterus. F. Luque.—p. 97.
Influenza at Bilboa in 1919. A. López.—p. 101.
Treatment of Osteomyelitis. A. M. Arquellada.—p. 113. Conc'n.

Prolapse of the Uterus.—Luque gives fifteen illustrations of different ways of correcting genital prolapse, and says that in the more serious cases the results are exceptionally dependable with Wertheim's method of utilizing the uterus itself to reenforce the floor of the pelvis. The bladder then lies on top of the uterus. Wertheim has lately modified his technic by pulling down the fundus of the uterus a little, which causes the cervix end to pivot up, and he sutures this cervix end to the sacro-uterine ligaments, thus holding the uterus slanting instead of horizontal, and the cervix at a point where it is impossible for it to work loose and sag down to the vulva.

Nov. 29, 1919, **9**, No. 108

*Accidental and Constitutional Psychoneuroses. E. Fernández Sanz.—p. 157.
History of Medicine in Spain. L. Lasbennes.—p. 159.
*Treatment of General Paralysis. G. R. Lafora.—p. 161.

Psychoneuroses.—Fernández expatiates on the difference in the outlook between what he calls constitutional and accidental psychoneuroses. The constitutional is continuous, with waves of aggravation and remission, while other psychoneuroses are intermittent, with relapses, separated by periods of latency. The constitutional group includes hysteric and psychasthenic psychoneuroses; the accidental group includes the cases of neuropsychic asthenia, anguish and simple depression. The prognosis is better with this latter group. He warns in speaking to patients to avoid the term "constitutional" in this connection as liable to depress them.

Progressive Paralysis.—Lafora reiterates that three years of experience have convinced him that general paralysis in the first six months is capable of complete remission under appropriate treatment. (His latest report was summarized in THE JOURNAL, Dec. 6, 1919, p. 1808.) The main thing now is to detect it during these first six months or better yet, before it has induced the classic symptoms. This is possible by systematic periodical exploratory lumbar puncture, and he describes two cases in detail to show the importance of this. The two syphilitic men of 36 and 49 presented an almost identical clinical picture, insomnia, a tendency to aphasia and absentmindedness but no hallucinations, etc. As only two years had elapsed since infection in the younger man, the diagnosis of cerebral syphilis seemed certain in his case, while progressive paralysis seemed equally certain in the other case, the symptoms not coming on until twenty-three years after infection. But the lumbar puncture fluid told another story, the findings showing general paralysis in the younger man and merely vascular syphilis in the other—all confirmed by the later course of the cases.

Prensa Médica Argentina, Buenos Aires

Nov. 10, 1919, **6**, No. 16

*Auricular Flutter. H. L. Caretti.—p. 157.
Activity of the Curare of the Amahuacas Indians. J. Guglielmetti and G. Pacella.—p. 160.
*Hematoma in Suprarenal Capsule. Bacigalupo and Perazzo.—p. 161.
*Brück's Precipitation Serochemical Test. Mazza and Bárriga.—p. 162.
Hepatoma in Young Infant. A. Casaubon and J. Bacigalupo.—p. 163.

Auricular Flutter.—Caretti gives several tracings from a case of auricular flutter in a man of 64. The auricular flutter was scarcely modified in the least by a vigorous course of treatment with digitalis, which suggests that the condition will probably merge into heart block before long.

Hematoma in Suprarenal Capsule.—The hemorrhage in the suprarenal in the 4 days' infant proved speedily fatal. Some injury during the birth process was evidently responsible for it as also in Delucca's two cases in newly born infants with difficult delivery.

The Globulin Precipitation Reaction.—Mazza and Bárriga report positive findings with the Brück globulin precipitation reaction, harmonizing with the Wassermann reaction in 78 per cent. of the 150 cases examined. They obtained a positive precipitation reaction with negative Wassermann only in two out of the 150. By estimating the results in less than twenty-four hours, the proportion of nonspecific reactions is much less.

Revista Médica del Uruguay, Montevideo

September, 1919, **22**, No. 9

Obstetric Manikins. J. A. Beruti.—p. 663. See abstract p. 140.
*Chronic Constipation. C. Robertson Lavalle.—p. 680.
*Partial Tetanus. A. Rodriguez Castro.—p. 691.
*Hydatid Cysts in Uruguay. Victor Zerbino.—p. 695.

Surgical Constipation.—Robertson applies this term to chronic constipation rebellious to systematic medical treat-

ment, and describes the various surgical measures required for different conditions. He warns that the tissues should be kept from drying out by copious injections of physiologic saline. This is particularly necessary with operations on the colon, as absorption of water from the colon is thus prevented. He emphasizes the paramount importance of post-operative treatment, insisting in particular on ample supplies of water. This tends to reduce vomiting after general anesthesia, which puts such a strain on the sutures. After fixation of organs he keeps the patients in bed with the feet raised 15 cm. and feeds abundantly to fatten, guarding against gas production and the use of purgatives.

Partial Tetanus.—The young child developed fatal cephalic tetanus after an injury of the palate from a splinter of wood it had thrust into its mouth. This is the third case of partial tetanus recorded in Montevideo during the last eleven years.

Hydatid Cysts in Uruguay.—Zerbino remarks that the hydatid cyst is one of the scourges of Uruguay and is a national disgrace, as this is one of the most easily exterminated of diseases. In the public hospital of Montevideo the number of cases has increased from 11 in 1896 to 165 in 1915. The total figures include 216 cases in children representing 4.34 per cent. of the hospitalized children; the adults formed 1.32 per cent. of the total hospitalized. Throughout the country the proportion approximates one hospitalized case per five thousand inhabitants. The statistics show that the disease affects children and the young predominantly, up to the age of 30 or 35. The liver and lungs were the seat of the lesion in over 60 and 21 per cent., respectively, in children, and over 54 and 23 per cent. in adults; the brain in 3.82 per cent. in children; none in adults. Cases in adults are probably listed as cerebral tumors, etc. The bones were the seat in 0.83 per cent. in adults; none in children. Multiple localizations were found in over 3 per cent. in children; none in adults. In 106 children with hydatid cysts, the cyst suppurated in nearly 19 per cent.

Acta Scholae Medicinalis Univ. Imp. Kioto

Sept. 1, 1919, **3**, No. 2, German Edition

*Action of Nicotin on Muscles. K. Okushima.—p. 151.
*Epinephrin and Heat Regulation. S. Kondo.—p. 169.
*Autolysis of Vitreous Body. Y. Hijikata.—p. 207.
*Sodium Oxalate, Citrate and Tartrate. S. Hara.—p. 213.
*Agglutinability of Vibriones. T. Toyoshima.—p. 233.
*Action of Gases on Muscle. A. Gohara.—p. 239.
*Action of Epinephrin, etc., on Skeletal Muscle. K. Okushima.—p. 261.
Histology of Corneoscleral Junction. K. Hiwatari.—p. 277.
*Influence of Thyroidectomy on Gestation. T. Ukita.—p. 287.

Action of Nicotin on Skeletal Muscles.—Okushima's research on frogs indicates that nicotin excites the motor nerve terminals. Its action on muscle substance is first stimulating and then paralyzing. It is able to check the paralyzing action of curare to a certain degree.

Action of Epinephrin on Heat Regulation.—Kondo found the influence of epinephrin on the temperature negligible except when it was injected directly into the brain. By this route even a small amount sends the temperature up at once, unless this effect is checked with antipyrin or by long fasting. Intracerebral injection of saline or olive oil induces a very gradual rise in temperature, as also the subcutaneous injection of peptone and certain other substances.

Production of Lactic Acid in Autolysis of Organs.—The beef vitrous body contains lactic acid, and the amount increases during autolysis.

Toxic Action of Sodium Salts of Oxalic, Citric and Tartaric Acid.—Hara's research on mice demonstrated that the toxicity of these salts does not parallel their calcium-precipitating power, but this latter seems to be responsible for their action in enhancing the narcotic effect of magnesium sulphate.

Agglutination of Vibriones.—Toyoshima warns that non-cholera vibriones are liable to be agglutinated with cholera serum, and he theorizes to explain the reason for this. Exact differentiation, he reiterates, requires the Pfeiffer test reaction.

Electric Test of Action of Gases on Muscle.—Gohara describes the effect of electric stimuli on surviving mammalian nonstriated muscle under the influence of gases. The organ studied was the rabbit spermatic cord, and the gas was carbon dioxid. The electric apparatus devised for the purpose is illustrated. The gas displayed a paralyzing action.

Action of Epinephrin, Amins and Amino-Acids on Skeletal Muscle.—Okushima reports that epinephrin and the aromatic amins stimulate the skeletal muscle in small doses but paralyze it in higher concentrations. The action seems to be exerted on the terminal motor nerves.

Influence of Thyroidectomy on Gestation.—Ukita expatiates on the vast field for research on endocrine functioning by acting on the various ductless glands during pregnancy, and watching the effect on the fetus and on the progress of gestation. Thyroidectomy early in gestation in rabbits confirmed the intimate relations between the mother and the fetus, and that the thyroid is an extremely important factor in the development of the fetus and the normal course of gestation. The latter was prolonged to twice the normal time; the young were small and weak, and the centers of ossification abnormal, while the fetal thyroid gland was hypertrophied, and the development after birth was not regular. It is evident that the thyroid of the fetus has some activity even in the uterus, the hypertrophy suggesting a compensating process. This article is in English.

Archiv für Kinderheilkunde, Stuttgart

May 17, 1919, **67**, No. 3-4

*Fate of Syphilitic Children. E. Müller and G. Singer.—p. 161.
*Acid Reaction of Blood in Relation to Albumin Requirement. Gertrud Fuhge.—p. 291.

Fate of Thoroughly Treated Syphilitic Children.—Müller and Singer review the experiences since 1909 when the first Welander home for children with inherited syphilis was inaugurated in Germany. They devote nearly 130 pages to the tabulated findings year by year in 214 children who have been inmates of the institution, and call special attention to eighty-four who have been kept under surveillance for two, four, nine or ten years. All this material is classified according to treatment and other features of the cases. The data demonstrate that far better results were realized by this prolonged systematic treatment than by other means, but the final judgment will be possible only when the children get to be 30, 40 or more years old. But even already it is evident that the most serious consequences of congenital syphilis can be essentially attenuated or even completely cured. The mortality differed widely in different years; of late the children seemed to succumb to the syphilis itself and not to intercurrent disease so much as formerly, especially the infants. The total mortality among 202 syphilitic children was 22.8 per cent. The Wassermann reaction was negative on the final examination of the sixty-nine children given the full course of treatment. The children were given usually from seven to nine courses of treatment as they lived in the institution for three or four years.

The Acid Reaction of the Blood and the Albumin Requirement.—Fuhge relates that on the prevailing vegetable diet, with little meat, examination of the urine of 150 children in different children's asylums, all on the same day, showed an alkaline reaction, almost without exception. Only on the days with meat was the reaction neutral or acid. Five healthy children were given calcium chlorid, aiming to make the urine acid on the common diet. This was accomplished with 2 or 3 gm. in boys of about 12. These experiences demonstrate that calcium chlorid acts as an acid in the metabolism. This was evident from the increased ammonia content of the urine. Nothing was observed to indicate that the preponderance of an acid or alkaline reaction affects the nitrogen requirement, but the fact that calcium chlorid behaves as an acid suggests caution in its prolonged administration to children.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Nov. 20, 1919, **49**, No. 47

*Apparatus Alleged to Help the Deaf. E. Oppikofer.—p. 1769.
*Electric Accidents Affecting the Ear. F. Nager.—p. 1778.
Epithelioma of the Trachea. T. Hug.—p. 1783.
*The Protection Afforded by Influenza Masks. A. Lauterburg.—p. 1786.

Apparatus Claimed to Help the Deaf.—Oppikofer gives illustrations of his collection of twelve specimens of what he calls *schwindelhafte Ohrapparate.* He urges that similar collections should be in every ear clinic so that the deaf can see for themselves and have explained to them what frauds these "thermo-electric tympanums," audiphones, acoustiphones, electromagnetic microphones, etc., in reality are. The devices mentioned above cost, respectively, 75 francs, 20, 325 and 35 francs. Oppikofer declares in conclusion that these frauds not only obtain money under false pretenses but they are liable to do direct damage to the ear and cause the postponing of proper treatment in time for it to be effectual, and hence he thinks the state should forbid the advertising of such fakes. Some of the cantons in Switzerland have already imposed certain restrictions, but they are few and not always enforced. There is no federal legislation on the subject of quackery. Until all the states and neighboring states set energetically to work, these quacks that prey on the deaf will continue to reap their harvest.

Electric Injury of the Ears.—Switzerland has averaged from 50 to 100 serious electric accidents in the last few years and the number is increasing. Nager reports a case of injury of the ears from a live-wire accident, and summarizes four similar cases on record. Any part of the ear may be injured by the electric accident and the examiner afterward should bear this in mind as also the possibility of injury from the detonation alone, as the current is short-circuited. The detonation was regarded as the main factor in the personal case described, and the man was given 2,000 francs compensation for the unilateral cochlea injury.

Influenza Masks.—Lauterburg describes fifty-two sets of experiments which determined that the usual influenza masks are readily permeable for bacteria.

Nov. 27, 1919, **49,** No. 48

*Pharmacology of Circulation in the Lungs. P. Wolfer.—p. 1817.
*Rhinogenous Headache. E. Gallusser.—p. 1823.
*Hallux Valgus. H. v. Salis.—p. 1833.

The Pharmacology of the Circulation in the Lungs.—Wolfer describes some devices with which it is possible to study the effect of different drugs on the circulation in the lungs. The data thus recorded apparently demonstrate that the intrapulmonary circulation is independent of the greater circulation. The two seem designed to supplement, compensate, and balance each other. Different drugs act differently on the two circulatory systems. For example, epinephrin seems to passively and perhaps also actively dilate the vessels of the pulmonary circulation.

Rhinogenous Headache.—Gallusser emphasizes that some long unsuspected nasal disease, which has never given any recognized subjective or objective signs of its existence, may entail headache for which no cause can be discovered. He describes a number of cases of this kind and warns of certain features that might suggest the clue. The headache is generally in the frontal region, a sense of oppression, a heavy feeling in the whole head, with occasional paroxysms of severe pain. The severe pain usually develops on arising in the morning (from change of position) and wears off later, but the headache may come on very severe at any hour after sneezing, bending over or emotional stress. This is liable to give the pain a misleading neuralgic character. Another symptom is the pain on pressure of the internal angle of the eye, over the frontal sinus. The most violent pains also are sometimes promptly and completely relieved by cocain to the upper interior of the nose. This immediate relief by cocain calls for exploratory opening of the frontal sinus. One man of 48 had had headache on the right side daily for ten years, incapacitating him at times, but none of the numerous physicians consulted had ever detected any symptoms on the part of the nose. No treatment had given any relief and he had been exempted from military service on account of habitual headache. Tapping the right side of the skull and pressure on the roof of the right orbit were painful. The middle turbinate was unusually thick. To get a better view, Gallusser pushed this turbinate to one side, and the patient exclaimed at the relief this afforded. This encouraged high resection of the middle turbinate, opening the frontal ethmoidal cells and exposing the opening into the frontal sinus. Nothing pathologic could be detected, but the headache was cured once and for all. In another case long martyrdom from headache was cured by opening up the frontal sinus although nothing pathologic could be detected in it except that it was extremely sensitive to the probe. This woman of 44 tried to commit suicide on account of her headaches, which by exclusion had been long qualified as nervous. In neither of these two cases was any sign of suppuration found.

Treatment of Hallux Valgus.—Salis reviews his experience with 286 cases of hallux valgus and describes his successful conservative treatment of the milder forms.

Deutsche medizinische Wochenschrift, Berlin

Nov. 6, 1919, **45,** No. 45

*Protective Function of the Skin. E. Hoffmann.—p. 1233.
Effect on Health of System of Food Rationing Adopted in Denmark. M. Hindhede.—p. 1236; Reply. M. Rubner.—p. 1237.
*Effect on Growth of Lack of Minerals in Food. P. Grabley.—p. 1238.
*Nerve Grafting. R. Eden.—p. 1239.
*Intra-Abdominal Injection of Air for Roentgenoscopy. K. von Teubern.—p. 1242.
The Diagnosis of Meningitis. D. Kulenkampff.—p. 1243.
Experiences with F. F. Friedmann's Tuberculosis Remedy. O. Roepke.—p. 1244
Pain in Cuneiform Bones of Foot. H. von Salis.—p. 1249.
*The Treatment of Erysipelas. F. Bardachzi.—p. 1250.
By-Effects of Acetylsalicylic Acid. Friedemann.—p. 1251.
Health Resorts and Hydrotherapeutic Sanatoriums. L. Feilchenfeld.—p. 1251.
Reorganization of Medical Curriculum. J. Schwalbe.—p. 1252. Conc'n.

An Esophylactic (Protective) Function of the Skin.—Hoffmann has been much interested in Bruno Bloch's opinions on "Dermatology in Relation to Problems of Metabolism and Immunity," as expressed in a course of lectures delivered at the University of Zürich. He believes, with Bloch, that the skin has an important biologic function that has not been fully recognized. By virtue of this function the vital organs are protected to a great extent against disease germs. This he regards as one of the main points of contact between dermatology and general medicine. Bloch had been led to the consideration of this question by the results of the recent investigations on the allergetic reaction of the skin in trichophytosis, tuberculosis and syphilis. Bloch emphasizes that the skin plays the most important part in the phenomena of allergetic immunity and of hypersusceptibility, whereas in tetanus, diphtheria, etc., the blood is the carrier of the prophylactic forces. This may perhaps be compared to the protection afforded a country by its land and naval forces. The fact that when the skin is extensively affected in tertiary syphilis and lupus, the internal organs so frequently escape, and the part played by the skin in overcoming exanthematous infectious diseases, sustain this assumption. But more especially the recent investigations of the allergetic function of the skin, together with the undeniable therapeutic effect of general light baths, lead Hoffmann to believe that the skin must produce immunizing materials that exert a healing influence for, in view of the slight penetrability of the short-wave rays used in phototherapy, he can find no other explanation. Owing to its importance in connection with biology and general pathology, he reports in detail the various angles from which he has viewed the assumption of such a distinct function of the skin, thinking that the hypothesis would have at least heuristic value, that is, might incite others to research.

Effect on Growth of Lack of Minerals in Food.—Grabley remarks that all admit that the restricted war diet was the cause of many disturbances of growth and metabolism, but all are not agreed as to exactly what ingredients were lacking in this diet. Many emphasize the lack of variety, others the deficiency in fat and protein, others the absence of vitamins. Very few mention the metabolism of mineral substances, but this, Grabley thinks, is of vital importance. The normal functioning of the cells, as has been shown by the study of the cell nucleus, depends on the optimal isotonicity of the cell fluid. To insure this, necessary mineral sub-

stances must be present. Various deficiency diseases result partly no doubt from the lack of vitamins, but even more from the lack of mineral substances. Schiff ascribes edema to extensive damage to the cell structure which upsets the water balance in the body and causes faulty metabolism of mineral substances. Grabley holds that just the reverse is true; namely, that the faulty metabolism of mineral substances in the cell is due to the deficiency of these substances in the diet. The demineralization of the cell produces the water imbalance, causes extensive damage to the cells, interrupts cell functioning, and finally destroys the cell nucleus and the cell. Grabley cites in support of his views the conclusion reached by R. Berg, the physiologist and chemist, to the effect that hemophilia is due to a disturbance of the balance of mineral substances in the blood. Grabley accepts the theory that the sources of energy in the animal organism, in short, life itself, are derived from electrochemical and electrophysical processes. Purely organic substances and their solutions remain chemically and physically inactive until they are mixed with inorganic salts; then the chemicophysical and the electrolytic processes in the cell fluid begin; hence the importance of inorganic salts in the human dietary.

Nerve Grafts.—Eden reports an unsuccessful attempt at nerve grafting after a shell wound of the right arm. The wound healed but left radial paralysis. The radialis was laid bare and a defect 10 cm. in length was discovered. A corresponding segment of a popliteal nerve from an amputated limb was used to bridge the gap, the transplant being fixed by means of fine epineural interrupted sutures and embedded in healthy subcutaneous tissue at a safe distance from the scars. The wound healed promptly, but the after-treatment by means of electricity and massage was without result. Nine months after the original operation the region of the transplant was reopened. The transplant bore little resemblance to a nerve but looked more like a rough strip of connective tissue. The transition from the nerve to the transplant was gradual, so that the ends of the transplant could not be definitely located. Stimulation by means of a strong electric current brought no reaction. The transplant was therefore removed and the peripheral end of the nerve was grafted into the median.

Injection of Air Into the Peritoneum for Roentgenoscopy.—Von Teubern thinks this method of pneumoperitoneum has considerable value. The procedure is, however, somewhat painful, and its use will doubtless be confined to cases in which other, less painful methods have not accomplished the desired result.

Treatment of Erysipelas.—Bardachzi did not find colloidal silver preparations, radium, etc., effectual in the treatment of erysipelas. He believes that none of the specific methods are superior to conscientious symptomatic treatment. He recommends compresses moistened with dilute Burow's solution and laid on the affected parts, and prescribes acetylsalicylic acid several times a day. In all severe cases digitalis is indicated. The results of this treatment in 183 cases lead Bardachzi to believe that no specific treatment will accomplish more.

Münchener medizinische Wochenschrift, Munich

Sept. 19, 1919, **66**, No. 38

*Osteoporosis and Osteomalacia. Alwens.—p. 1071.
*Skin Reaction in Typhus. E. Friedberger and van der Reis.—p. 1075.
Agglutination in Typhus. V. van der Reis.—p. 1077.
Gunshot Wounds of the Ear. Haymann.—p. 1078.
Supernumerary Tarsal Bones. Baisch.—p. 1081.
Technic of Examination for Pale Spirochete. Oelze.—p. 1082.
Determination of the Wave Length of Homogeneous Roentgen Rays. T. Christen.—p. 1084.
Ultraviolet Phototherapy for Disabled Soldiers. Zimmermann.—p. 1085.
Isoviscous Physiologic Sodium Chlorid Solution. O. Kestner.—p. 1086.
Silver Salvarsan Sodium and the Wassermann Reaction. W. Schönfeld and G. Birnbaum.—p. 1087.
Spontaneous Pneumothorax in Pneumonia. P. Prym.—p. 1089.
A Fatal Case of "Luminal" Poisoning. E. Hueber.—p. 1090.
Influenzal versus Lethargic Encephalitis. Von Sohlern.—p. 1091.

Undernutrition in Relation to Osteoporosis and Osteomalacia.—Twenty-six cases of a disease of the bones were observed at Frankfort-on-the-Main between March and June, 1919. The age limits were 19 and 72, 65 per cent. of the 23 women being of the climacteric and postclimacteric age. The women were of the poorer class, and 16 of the patients admitted their nourishment had been deficient; namely potatoes, turnips, thin soup, war bread and the small meat ration. Milk, eggs, cheese and butter were lacking. Most of the women weighed under 110 pounds. In many, emaciation was far advanced; 7 had had rickets, 15 presented curvatures of the spine. Some were confined to bed. Spontaneous fractures had occurred in 10 cases. Dragging the feet was common. Alwens describes these conditions at length and his diagnosis is osteoporosis from undernutrition (deficiency of protein, lime and phosphorus). The rapid development of the pathologic symptoms, the effects on the thorax and the spine, and the lack of typical pelvic changes were features differentiating the syndrome from osteomalacia, though the clinical picture suggested osteomalacia, and this may develop later. In osteoporosis Alwens recommends a diet of high caloric value, with special attention to the protein, calcium and phosphorus content. Phosphorus in 0.5 mg. doses, three times daily, taken with cod liver oil, was found helpful. Calcium lactate, 3.0 gm. daily, is also indicated. Epinephrin did not prove beneficial. Prompt, distinct and continued improvement usually followed treatment.

Specific Typhus Skin Reaction.—Friedberger and van der Reis relate that an emulsion of the bacillus with which the agglutination test is made in typhus induces a pronounced inflammatory reaction when injected subcutaneously in the healthy and in diseases other than typhus, but there is no reaction in typhus patients. The lack of the usual reaction is thus a sign of the presence of typhus. They call the bacillus used the Weil-Felix bacillus X 19. (The bacillus used commonly for the agglutination test is the proteus X.)

Zeitschrift für Geburtshülfe und Gynäk., Stuttgart

May 31, 1919, **81**, No. 2

Mesodermal Mixed Tumor in Pouch of Douglas. O. v. Franqué.—p. 285.
*Basal-Cell Cancers of the Uterus. E. Krompecher.—p. 299.
*Progress in Roentgen Technic. F. Winter.—p. 339.
Embryology of the Hymen. O. Küstner.—p. 353.
*Viability of Premature and Weakly Infants. H. Schmitt.—p. 382.
Estimation of the Fetus as a Living Being. F. Ahlfeld.—p. 394.
*The Limit of Viability of the Prematurely Born. F. Ahlfeld.—p. 400.
*Diseased Uterine Adnexa and the Appendix. O. Beuttner.—p. 406.
*Pregnancy Dropsy. W. Zangemeister.—p. 491.
*Heart Disease and Pregnancy. K. Kautsky.—p. 559.

Basal-Cell Uterine Cancer.—Krompecher's article is based on 216 cases of uterine cancer. He was surprised to find that 75 per cent. of them represented basal cell cancers. He classifies this material, with several plates, showing the histology and origin. The solid type formed 63 per cent., while types such as are found mostly on the skin were very rare.

Roentgen Technic.—Winter writes from the Munich gynecologic clinic to extol the progress realized in radiotherapy and radiotechnic with the introduction of tubes of the Coolidge type with which he has been working since May, 1916.

Viability of the Prematurely Born.—Schmitt relates that 316 children weighed only from 700 to 2,200 gm. among the 8,881 born at the Würzburg maternity hospital in ten years. The mortality before the end of the year in this small group was 78 per cent. The smallest child that survived weighed 1,100 gm., but it is absolutely exceptional when a child survives that weighs under 1,500 gm. Even those that weigh from 1,500 to 2,000 gm. have very feeble vitality so that at most 25 per cent. survive the first year. There is no special physical inferiority for which the small weight can be incriminated. With children over 2,000, the prospects are favorable for 50 per cent. surviving.

The Limit of Viability of the Prematurely Born.—Ahlfeld reviews the literature on the nineteen smallest and earliest born infants that have been recorded. The periods of gestation were from the twenty-fourth to the thirtieth week, and the weight ranged from 500 (the tenth day of life) to 1,000 gm. He tabulates the details, and concludes that 750 gm.

at birth can be accepted as the lowest limit possible for a child to survive.

The Uterine Adnexa and the Appendix.—Beuttner takes nearly ninety pages for his data and arguments against systematic appendicectomy as a routine supplement to operations on the adnexa. Microscopic examination of the appendix in eighty-seven cases in which this had been done showed that the appendicectomy had been actually indicated only in four of the cases.

"Pregnancy Dropsy."—Zangemeister discusses the course and the connection between hydrops gravidarum and kidney disease or eclampsia, as he studied it in 193 cases of "pregnancy dropsy." In the first place, he declares, the tendency to dropsy should be combated by avoiding ill ventilated and dusty air, chilling of the skin, constricting clothing, overexertion, excesses in eating and drinking, especially of salt, not lying in bed too long, and not taking drugs which might injure the blood or vessel walls. These measures are particularly necessary if there is any tendency to slight edema, and if there has been a tendency to dropsy in a former pregnancy. When a tendency to slight dropsy has become apparent, but there is as yet no rise in blood pressure and no albuminuria or preeclamptic symptoms, then bed rest and restriction of the intake of fluids generally suffices to banish the hydrops, but this is not permanent until the weight has gone down under increased diuresis. This of course does not cure the causal abnormal permeability of the capillary walls, but the restriction of intake of fluids helps this by relieving the load in the vessels. The patients bear this well if the intake of salt is reduced, and also of solid foods, to keep the thirst down and relieve the metabolism in general. There does not seem to be retention of salt by the kidneys, but its harmful influence is manifest in other ways. He warns against digitalis as not required in the mild cases, and as liable to bring on eclampsia in the grave cases. He saw this occur in two cases, the blood pressure running up and the convulsions developing. Measures to induce sweating never did harm in his experience. The special benefit from them he ascribes to the different distribution of the blood which they realize. He warns not to attempt the sweating procedures if the blood pressure indicates impending eclampsia. Decapsulation of the kidney may be considered in extreme cases, but not with developed eclampsia. Venesection and lumbar puncture may be necessary, or evacuation of the uterus. "In established eclampsia, reduce the pressure on the brain, reduce the tissue hydrops as the cause of the brain swelling responsible for the pressure, and fight off the attacks of high blood pressure which start the convulsions anew, but the first thing is to empty the uterus."

Heart Disease and Pregnancy.—Kautsky emphasizes that a pregnant woman with mitral stenosis, on account of the increased area of the circulation, is kept constantly in conditions like those of a nonpregnant woman continuously at hard work, day and night. Fully 40 per cent. of the pregnancies with mitral stenosis terminate in spontaneous abortion or miscarriage. He bases his treatment on these facts, and especially on his repeated experience that the demands even of a normal, uncomplicated pregnancy are enough to upset the compensation with a valvular defect.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Oct. 4, 1919, **2**, No. 14

*Nervous Complications of Influenza. J. J. H. M. Klessens.—p. 970.
*Height and Weight of Children. C. J. van der Loo.—p. 976.
Remuneration of Sick-Fund Physicians. Vrendenberg.—p. 986.
*Cancer of Both Fallopian Tubes. T. B. Phillips.—p. 988.

Nervous Manifestations Complicating Influenza.—Klessens states that he encountered many pathologic nervous conditions associated with influenza, such as brachialgia, sciatica and persistent paresthesias. One patient gave evidence of encephalitic foci in the medulla oblongata, and transverse cervical myelitis occurred in another. Klessens ascribes the condition to one or more foci at the bulb. An apparent case of encephalitis pontis was noted. The leftsided paresis of the leg with exaggerated Achilles tendon reflex and diminished skin reflexes; the disturbances in hearing and the hypalgesia in the trigeminal region suggested a pons lesion. Another patient presented dizziness, deafness, nystagmus, and falling backward when the eyes were closed. Here the lesion may have been in the cerebellum, though the fact that the direction of the falling was not affected by the position of the head speaks against this assumption; in this case there had been a middle ear infection. The conditions found in one case—dizziness, nausea, nystagmus to the right, a falling sensation, and deviation to the right in walking—Klessens ascribes to a lesion of the cerebellum. A child of 8 presented an especially interesting case of a lesion of Purkinje's cells, caused by the toxins of the influenza virus. The nystagmus, the disturbance in speech, the static ataxia and the dysdiadokokinesia form a syndrome that points to the cerebellum.

Height and Weight of Children.—Van der Loo tabulates the relative height and weight of 598 children between 6 and 12. He found thirty-one "scrofulous" children who averaged 0.36 kg. less in weight than the others, and seventy-five weak children, who averaged 1 kg. less. In children of a given age there was a divergence of about 6 kg. in weight and 30 cm. in height. The taking of height and weight awakens rivalry and serves as an aid to parents and physician in bringing weak children up to standard. A weight more than 1 kg. below the average is an indication for a careful examination of the child. The height is not so significant as the weight, as the divergence is much greater.

Cancer of Fallopian Tubes.—Philips' patient, an unmarried woman of 44, was still menstruating regularly, and the bilateral presumably primary papillocarcinoma of the fallopian tube was discovered only by chance. For about a year she had had a whitish, foul-smelling discharge from the vagina. There was no admixture of blood, but she felt herself growing weaker and was losing weight, and there was slight pain in the lumbar region. She had been referred to the hospital for atresia of the vagina, and an occluding membrane was discovered in the vagina. The uterus could not be distinctly outlined but on each side a growth was palpable apparently arising from the ovaries. The growths were removed by a laparotomy on the assumption of bilateral hydrosalpinx.

Ugeskrift for Læger, Copenhagen

Nov. 27, 1919, **81**, No. 48

*Action of Small Doses of Roentgen Rays. Hjalmar Eiken.—p. 1849.

Action of Small Doses of Roentgen Rays.—Eiken has been experimenting with roentgen treatment in doses so small that the action of the rays seems to be restricted merely to a stimulating influence. Laboratory animals and fowls were treated in this way daily for months and then every third day up to a year, and none showed the slighest sign of injury therefrom. Their growth and procreation proceeded normally and their young procreated normally in turn. Similar experiments with animals inoculated with tuberculosis demonstrated that the reaction of the tissues to the tubercle bacilli occurred earlier and was more active than in the controls, the incipient foci healing. Applying these results to human beings, there seems a prospect of aiding the cure by this means in persons who display only a sluggish reaction, or the focus is located at a point where experience has always shown a torpid course. Without removing the clothing, the exposures were made for one minute from the front and from each side and for seven minutes from the back, and repeated every day or second day. The dose was $\frac{1}{700}$ and $\frac{1}{400}$ S. N. tablet. He gives the details of three cases of tuberculosis in which this treatment was applied. The stimulating action from it was unquestionable. The patients were 15 and 18 years old. In the superficial lesions the increased blood supply to the focus, the increased secretion and more pronounced demarcation were manifest, and then healing followed. One of the patients had tuberculous processes in lungs, cervical glands, in skin and in the tibia, with several fistulas. A total of 100 exposures were made, and all the fistulas and external processes healed. The bacilli disappeared from the sputum for a long time, but scanty bacilli have appeared in the sputum again recently.